the NORTHWESTERN MILLER

THE INTERNATIONAL NEWS MAGAZINE FOR THE GRAIN, MILLING AND BAKING INDUSTRIES

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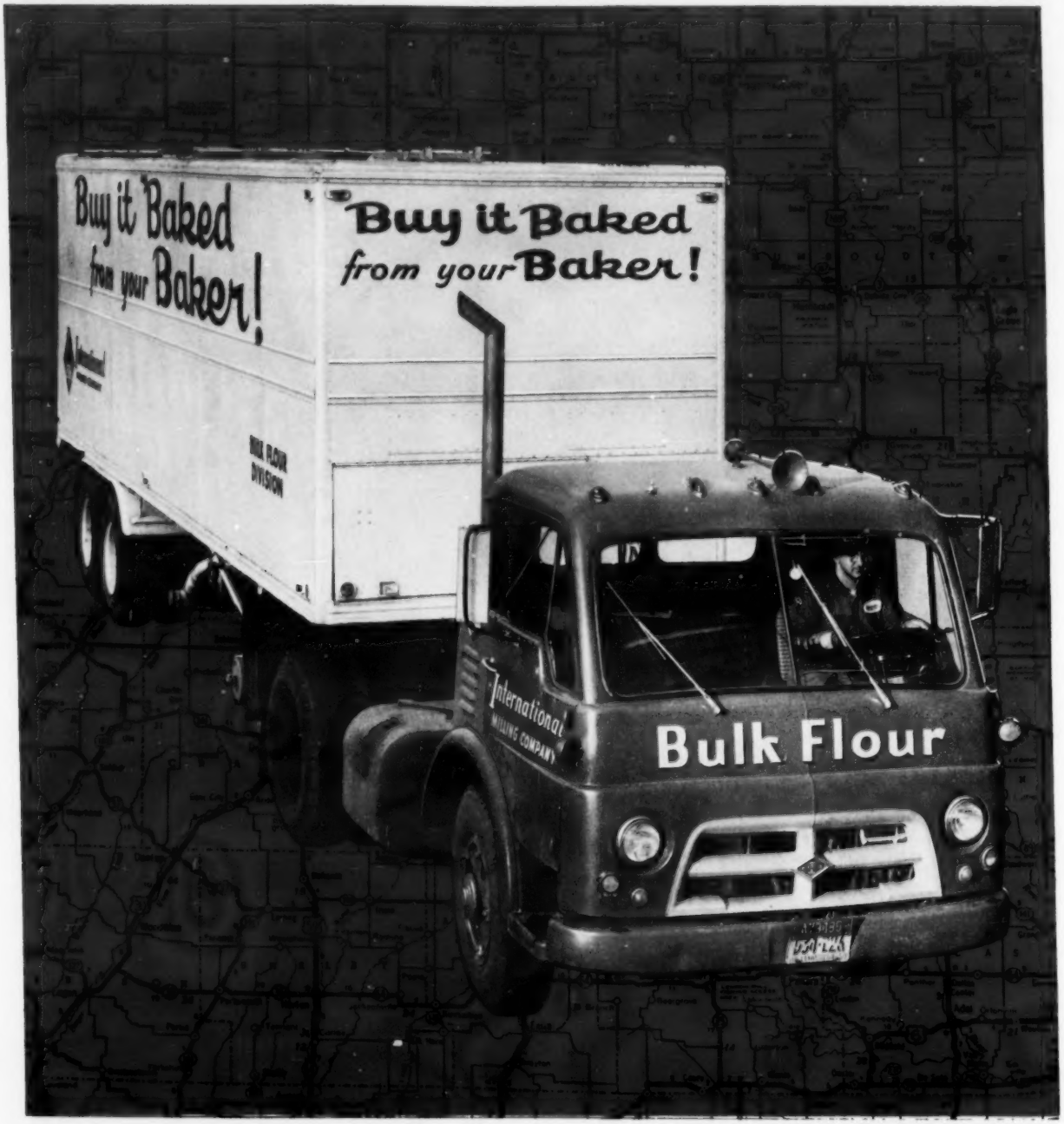

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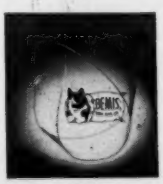

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the NORTHWESTERN MILLER

Published Every Other Week for the Grain, Flour and Baking Industries

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COVER PICTURE—

The old and the new, a study in contrast, is made by the new Bellera plant of General Mills, Inc., in the foreground. Behind it looms the old plant. Location—Buffalo.

FOR POSITIVE

"Sterile Zone"

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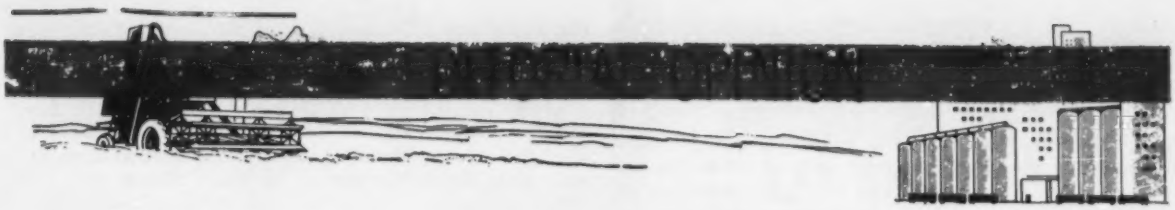


Foreign Trade: Uncle Sam Is the Sucker

EXPORT FLOUR BUSINESS is important business. The amount of flour moving overseas from U.S. and Canadian mills is important to every man who has the remotest connection with the growing of wheat, the milling of it into flour, and the baking of that flour into edible forms. Be he a combine operator, operative miller, cereal chemist, salesman or baker, his stake is a big one.

And it is important to every man, woman and child in both countries because flour goes to make up that important complex—foreign trade.

In the fiscal year ended June 30, 1960, the U.S. exported nearly 39.7 million hundredweights of flour, more flour than has been exported in any year since 1948 when the postwar world was hungry for food. The Canadians, in the 11 months ended on the same date, had sold nearly 14.7 million hundredweights, an improvement over the same period a year ago.

The U.S. sells flour to 105 countries and territories—the total was only 95 last year. Canada is selling to most of them, too. The salesmen from the mills, and the importers who represent them abroad, have to buck the competition of other flour exporting countries, of the local millers in the market, and of the new mills which are going up in increasing numbers around the world—many of them in traditional export markets.

This sort of competition is to be expected. It is all part of the natural economic order of things.

But the salesmen of flour, and of other U.S. goods, are coming up against something else—the interference of governments in the free flow of international trade. It is not a problem faced by the flour trade alone. Other industries face it in varying degrees of seriousness.

The U.S. Department of Commerce is alarmed at the situation. Currently, it is running a series of conferences with representatives of various industries to discuss the problem of widespread import restrictions which foreign governments are imposing on U.S.-made products. High tariffs, quota restrictions, excessive excise taxes and outright embargoes are among the handicaps listed by U.S. businessmen.

So what? Any country is entitled to put restrictions on the entry of the goods of another country into its area. True enough. But those very same countries are currently asking, nay demanding, unrestricted markets in the U.S.

"American industry," Frederick H. Mueller, secretary of commerce, recently told the food products section of the conference, "has been alerted as never before, to the necessity and profit desirability of foreign trade."

Industry representatives meeting with Mr. Mueller and the members of his top echelon at the food product conference were A. B. Sparboe, the Pillsbury Co.; Stanley Applegate, Red Star Yeast & Products Co.; M. F. Hore, the Quaker Oats Co., and George D. Bryson, General Foods Corp.

The U.S.—and Canada is also vitally concerned in the problem—needs export trade to fertilize its economy. Thousands and thousands of jobs depend upon export business and, in consequence, the prosperity of industries serving the home populations—bakers are an appropriate case to cite—increases when export trade is good.

The offending countries should be told plainly: Reciprocate or else.

The U.S. should wise up to the situation and cease playing the role of the benevolent uncle. The receiving relatives often refer to uncle, behind his back, as a sucker. And allowing foreign countries free access to the U.S. market when they are restricting the inward flow of American-made goods, is the action of a sucker. «

Euromarket a Danger to Export Flour

THE NETHERLANDS took 92,676 tons of flour from the U.S. in the fiscal year ended June 30, 1960, according to figures compiled by the export department of the Millers National Federation.

What chaos there might have been had that flour not been able to find a home in Holland and had, perforce, to be let loose on the U.S. domestic market. Or, because the flour would not have been run anyway, plants might have been shut down or operated on short time; certainly some jobs would have been lost.

And if other big customers—nine countries took more than 50,000 tons each in the fiscal year just ended—suddenly stopped taking flour, the chaos would be worse confounded. That healthy flour industry which Dr. Robert H. Cotton of the Continental Baking Co. believes so necessary for the welfare of the bakers would go out the window.

Holland is a country where vested interests, allied with politicians and perhaps bolstered by some thinking within the government itself, want to embargo imported flour. They have been trying to do it, without success, for the past 30 years, though the trade is now but a shadow of its former self.

The people who want to see the end of U.S. flour in Holland have a new ally—the European Common Market.

The situation now presented is a Gilbertian one when it is recalled that many U.S. government officials welcomed the concept of Euromarket with open arms when it was originally envisaged. Main offenders dwelt in the Department of State and in the upper echelons of the administration itself.

It is now apparent to the minds of many officials—in the Department of Commerce and in the Department of Agriculture—that Euromarket is a snare and a delusion. It can do untold harm to the business worked by many American firms in Europe. The flour trade is only one of many which will be hurt.

The history of flour business in Holland has been a stormy one. The alert and enterprising Dutch importers have striven hard to protect their interests in the face of strong opposition. They have done this as a service to their baker-customers who expressed a firm desire to have

EDITORIAL OPINION

strong American flours available in their plants. And the circulation of imported flour invariably prevents the establishment of what has become a vicious monopoly in some countries. Some former Dutch government officials fully accepted this thinking and policy was motivated, to some extent, by the acceptance of the theory.

Before 1930, flour moved into Holland free of duty and it accounted for about 30% of the consumption. During the depression of the 'thirties, imports were restricted in order to insure the maximum use of home grown soft wheat.

From 1945 to 1950 Holland was recovering from the war and imports were controlled by the government, with the aid of the importers themselves. Joe Meurs, Theo Verkley and Karel Heslenfeld, are internationally known in flour trade circles for their work with the Flour Import Bureau.

The trade was freed in 1950 with a duty free quota of flour from all foreign sources set at 75,000 tons. Any other flour over this figure has to pay 3% ad valorem. That figure represents about 8½% of current Dutch consumption.

One observer has this to say: "The result has been that Holland has the best flour of the Euromarket countries because, in spite of the restriction, home mills had to compete quality wise. These domestic mills insist that they can make any flour that is wanted by our industry, but practice has shown for a great number of years that many a bakery prefers certain kinds of American flour."

However, the problem, as far as U.S. interest is concerned, goes deeper than that of satisfying the customer. The Euromarket countries have excess milling capacity, and could be self-supporting in flour, though the area grows soft wheat only. In addition to Holland, the other countries are Germany, France, Italy, Belgium and Luxembourg. Of the six countries, only Holland imports flour. (The other European flour importing countries are Great Britain, Denmark and Norway, but they are not members of Euromarket.)

Euromarket policy—each supporting and supplying the other—is now bolstering the Dutch thinking allied against flour imports. It was revealed in THE MILLER (July 25, page 24) that the government may reduce or even eliminate the duty free quota of 75,000 tons. And there may even be complete embargoes on imported flour.

Alerted to the danger, U.S. interests—the National Association of Flour Distributors was among the leaders—have asked the government to prepare retaliatory measures aimed at reducing or stopping altogether the sale of Dutch cheese and bulbs in this country.

It will pay the countries in the union to maintain their trade ties outside the borders of their conclave. Otherwise, the demands for the use of the bludgeon will grow in the U.S. If not, then some valuable jobs which depend upon export trade will be jeopardized. «

The Bakers Use Their Battering Rams

THOUGH MOST MILL cash registers clanged more loudly and more often in the past fiscal year than in many previous years, the net profit on the sales dollar shows a deep downturn.

Flour millers know full well the reason. They are as financially astute and shrewd as any other businessmen. And the accountants and cost analysts sounded their adding machine alarm bells when the industry began the last crop year with unsatisfactory prices and margins. But that set the pattern for the rest of the year.

The price of flour remained static. Not even the upward climb of wheat prices caused a shimmer on the outward serenity.

By and large, however, the situation facing the industry in 1959-60 was little different from that prevailing in other years. Always, there has been the usual collection of adverse factors, but invariably one and sometimes two of those factors developed a favorable side, providing an offsetting influence.

In the last fiscal year, however, the millers got hit with everything in the book with no favorable developments around to mitigate their mistakes or nullify unfavorable trends.

For instance, in the 1958-59 fiscal year, millfeed was a bright factor in the market, and it helped put many companies higher in the black. In the fiscal year just closed, millfeed was weak and spotty.

Expenses continued to increase in accordance with the general economic trend of the country, but prices were not increased to cover those extra costs. The problem is confounded by the fact that so many of these increases in cost have not been taken into account in any of the past few years and appear to have gotten so far away from the cost card, that they may never come into computation.

Thus the industry has to be content with a net of 1¢ on the sales dollar while other industries boast of five, ten or fifteen.

All firms talk about the highly competitive conditions in the flour milling business. By that they mean the prices they offer, or have to take, from their baker-customers to keep the mills running.

The trouble with the milling business is simply this: The line is weak; it can be broken. The bakers know that given time, patience and persistence, their battering rams will achieve a breakthrough and the rest will pour through the gap to their headquarters. Who will blame the bakers?

They have done just that in this new season—and so we start again on the same merry-go-round. «

The Editor Congratulates . . .

● Niagara District No. 8 of the Association of Operative Millers for overtaking Flour City District No. 4 as the largest district in the organization.

● The officers of the Great Plains Wheat Market Development Assn. for changing the name of the group to Great Plains Wheat, Inc.

● Jack Spohn on his retirement from Ismert-Hincke Milling Co. after 50 years in the flour business. He presented the first paper ever delivered before a district meeting of AOM—Wheat State District No. 1. Ended career as president of AOM.

● The 25 firms who have already booked their space at the 65th annual technical conference and trade show of AOM to be held in Minneapolis May 22-26, 1961.

● Charles P. Dowd, Robin Hood Flour Mills, Ltd., on becoming a grandfather for the first time.

INDUSTRY RECORD . . . An Account of Trade Affairs and Events

United States:

Archer - Daniels - Midland Co. is brimming with expansion plans, realignment of key personnel and big budgets, all part of its effort to forge ahead in the industries it serves and some it would like to serve.

There's a new executive committee composed of **John H. Daniels,** president and chief executive officer; **Thomas L. Daniels,** chairman of the board; **Shreve M. Archer, Jr., Robert W. Austin** and **Samuel H. Rogers.** All are directors and John Daniels is committee chairman.

Directors now have confirmed formal sale of ADM's Mankato (Minn.) feed plant to Hubbard Milling Co. (but not its soybean processing plant at Mankato) and its Commander Elevator Division to the Farmers Union Grain Terminal Assn., St. Paul.

Stock Dividend . . .

ADM directors have declared a dividend of 50¢ share on common stock, payable Sept. 1 to stockholders of record Aug. 19. It's ADM's 136th cash dividend and its 116th consecutive quarterly dividend. For the record, there are 1,584,771 shares outstanding.

Other ADM Plans . . .

Stepping out with long strides, ADM has other plans. Its directors have earmarked $26 million for investment in new plants, products and equipment in the next two years. To start off the mammoth project, they've okayed a budget in excess of $11 million for the current year—highest in ADM history. Projecting into the 1961-62 fiscal year, the company expects to spend about $15 million in that fiscal year. Compare these figures with the $4 million budget in the past year and it's easy to see that big plans are afoot.

One area in which ADM is investing is chemicals, says the president, but it's not the only one. Soybean processing facilities, grain storage and merchandising installations are being improved. In a nutshell, ADM plans to concentrate where it has basic strength—expanding, accelerating, seeking new fields and disposing of operations no longer profitable or likely to show promise in the future.

CUSHMAN'S BAKERY at Portland, Maine, has installed a bulk handling system to receive flour in Airslide cars. Blending to Cushman's specifications is done at a Russell-Miller - King Midas mill and shipped 100,000 lb. to a car. Aluminum tubing blows flour into the bakery's seven bins at a rate of 1,000 lb. min. On hand for delivery of the first car were, left to right, Thomas St. Louis, Russell-Miller sales representative; W. W. Philbrook, Cushman's production manager; E. A. Hobbs, assistant to the president, and the president himself, E. S. Cushman.

Grain Division . . .

There are changes in ADM's grain division, with some familiar names and faces being shifted to spark the whole operation.

E. L. Brown

E. L. (Ned) Brown II becomes manager of wheat operations, and it'll be his job to handle procurement of that commodity for the flour milling division. To handle barley operations, ADM has given the nod to **Frank Seidl, Jr.,** assistant vice president. He'll continue also as manager of the specialty oats department.

Fred C. Olson becomes manager of all coarse grain operations, meaning he'll have responsibility for acquisition and merchandising of soybeans, flaxseed, corn, oats, rye and screenings.

Frank Seidl

It means, too, that the three appointees will keep their eyes on export activities of ADM's operations right along with their domestic operations.

Ned Brown was manager of wheat operations for the flour division and has been with the company since 1955 — he's been around the grain and milling business since 1923, and was assistant manager of ADM's Duluth branch before transferring to the flour division.

Fred Olson

Mr. Seidl has been with the company since 1940, when he started as an assistant buyer in the barley department. He's been an assistant vice president since 1955.

Mr. Olson, with ADM since last December as manager of linseed operations, is one of the most widely known figures in the flaxseed industry. His entire career has been in grain and allied businesses.

Legal Ruling . . .

The Washington Wheat Commission has been enjoined from all further activity—but a stay order has been granted which permits it to operate, as it has pending appeal by the state department of agriculture to the Supreme Court. The whole matter stems from a decision by the Superior Court of Walla Walla that the Washington Agricultural Enabling Act, under which the commission operates, is unconstitutional as pertains to wheat.

Floating Elevator . . .

A floating grain elevator is being fitted at Chicago for Rogers Terminal & Shipping Corp., nation-wide stevedoring firm, to use in topping off Seaway grain cargoes. It's a 90,000 bu. unit scheduled to operate in Lake Michigan near the mouth of the Calumet River, five miles down stream from the 20 million bushel riverside grain terminal of Cargill, Inc.

Meet Gary Zempel . . .

There's a new hand at the helm in the equipment development area of Pillsbury's bakery mix division. **Gary R. Zempel** has been named manager. He comes from the Hilldale, Mich., division of F. W. Stock & Sons, Inc., where he was vice president and works manager. Mr. Zempel brings to Pillsbury 22 years of experience in flour milling, mix manufacturing and sales administration. It'll be his job to direct development and sales of Pillsbury's bakery production equipment line which is merchandised through the bakery division's sales force.

Gary Zempel

It's a new position for Pillsbury, too, an effort to complement its complete line of bakery mixes with some cost-cutting production equipment, says **R. L. Johnston,** manager of the division.

Crop Quality . . .

The Kansas wheat crop now heading for mills and terminals came in with the highest test weight of record but a protein content that's below average. So says the Kansas Crop and Livestock Reporting Service and the state grain inspection departments of both Kansas and Missouri.

Tests of 8,679 cars of new wheat at terminal markets showed an average weight per bushel of 61.9 lb. and an average protein content of 11.5%. The inspection people say the wheat tested represents all Kansas counties.

Canada:

Robin Hood Expands . . .

Robin Hood Flour Mills, Ltd., has purchased one of the oldest milling businesses in Canada—a firm that dates from 1818, the Milton (Ont.) Milling Co. The business was started by one of Canada's pioneer families, the Martins. A grandson of the founder, **Dr. C. A. Martin,** will be available to Robin Hood in an advisory capacity.

In addition to its flour milling business, Robin Hood manufactures Supersweet formula feeds, which it distributes throughout Quebec and the Atlantic provinces. With acquisition of the Milton plant, it will expand distribution of Supersweet into the egg, poultry, pork and dairy areas serving the larger metropolitan centers of Ontario.

Robin Hood has plans for modernizing and enlarging the existing facilities to provide the best of quality and service in an industry outstanding for constant changes and improvements, stated company officials.

Philippines:

Petition Rejected . . .

The government has rejected a petition by local flour mills to tack duties on imports of U.S. and Canadian flour, apparently on the grounds that such imposition would hike flour prices to consumers.

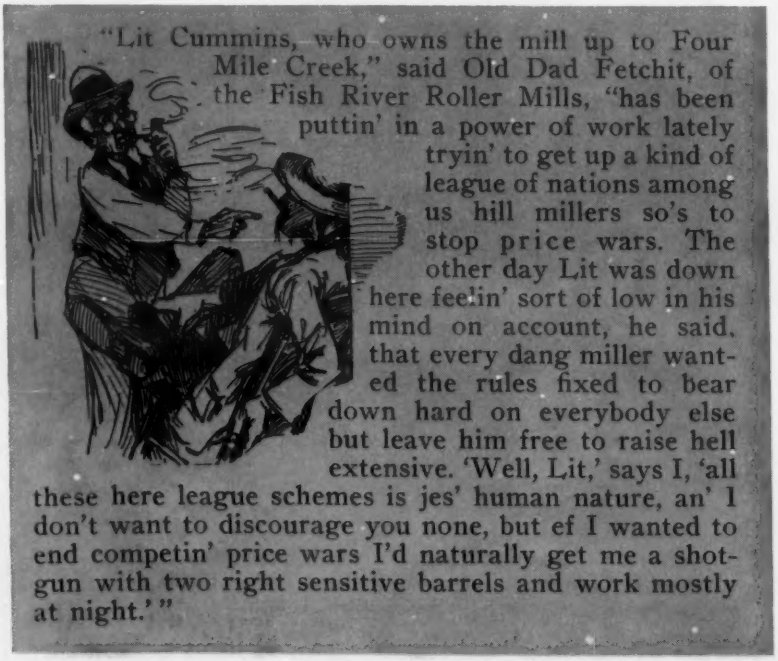
Local millers have no basis for claiming protection on hardship grounds, said the government, since they were earning good returns at the time the appeal was made to the tariff commission last March. Local millers claimed protection was needed against what they alleged as "harmful competition of subsidized flour imports." Local mills, continued the government, already were being extended substantial government assistance in the form of tax exemption, and existing control of flour imports through licensing has been effective in limiting imports to the minimum necessary to supplement domestic production.

Guatemala:

Control Office . . .

The government recently established a wheat import control office with authority to make certain Guatemala's entire wheat crop will be bought by local flour mills at no less than a minimum price. They intend to do it this way: A domestic wheat consumption quota will be assigned each mill. Plans call also for controlling wheat imports through a global quota, along with assigning individual import quotas to each mill.

Mills must purchase their quotas of domestic wheat before allocations of imported wheat are granted. Thus, virtually all marketing of domestic and imported wheat is controlled, the culmination of a series of efforts by the Ministry of Agriculture to help highland Indian wheat growers by guaranteeing that their crop will be purchased and by protecting them against lower priced imported wheat. «


"Lit Cummins, who owns the mill up to Four Mile Creek," said Old Dad Fetchit, of the Fish River Roller Mills, "has been puttin' in a power of work lately tryin' to get up a kind of league of nations among us hill millers so's to stop price wars. The other day Lit was down here feelin' sort of low in his mind on account, he said, that every dang miller wanted the rules fixed to bear down hard on everybody else but leave him free to raise hell extensive. 'Well, Lit,' says I, 'all these here league schemes is jes' human nature, an' I don't want to discourage you none, but ef I wanted to end competin' price wars I'd naturally get me a shotgun with two right sensitive barrels and work mostly at night.'"

C. M. & E. Reports Improved Sales, Dip in Income

Higher sales but lower net income —in line with other financial reports coming forth — sums up the fiscal statement of Colorado Milling & Elevator Co., Denver, which closed its annual books May 31.

However, and this statement was made over the names of George M. Hopfenbeck, board chairman, and Earl F. Cross, president and chief executive officer, C. M. & E. believes the results of operations were gratifying in view of problems faced during the year.

Moreover, physical properties were improved and modernized, net cash assets grew, and properties no longer of benefit to company operations were disposed of. Faith was expressed that C. M. & E.'s resources and an alert, capable, conscientious staff will cope with the problems to be faced. Stress was made of the fact that the company has, in addition to its strong net current assets, no term indebtedness, plus a loyal, competent staff to handle the tasks it is assigned.

Net sales and other operating income for fiscal 1959-60 amounted to $127,219,034 compared with $126,998,776 in the previous fiscal period. The cost of sales, operating charges, selling, general and administrative expenses brought this down to $124,889,705 compared with $123,689,161 in the previous year.

Income Figures

Net income before taxes totalled $1,736,744 against $2,830,724 in fiscal 1958-59. Consolidated net income after taxes amounted to $839,744 in the year now closed, compared with $1,362,724 in the earlier period. Dividends aggregating $773,475, equal to $1.40 a share, were declared during 1959-60.

As part of its plan to dispose of properties no longer useful to operations, C. M. & E. sold country elevator properties at Hereford and Paoli, Colo.; Cache Junction, Utah, and Bryne, Idaho. It also sold its Denver warehouse property, formerly part of the Crescent flour mill.

In a forward-looking step, stockholders last February approved revised, improved pension plans for employees, both of which now await federal approval prior to being instrumented. «

Colorado Milling & Elevator Company

(Incorporated in Colorado)
AND SUBSIDIARIES
Consolidated Balance Sheet

ASSETS

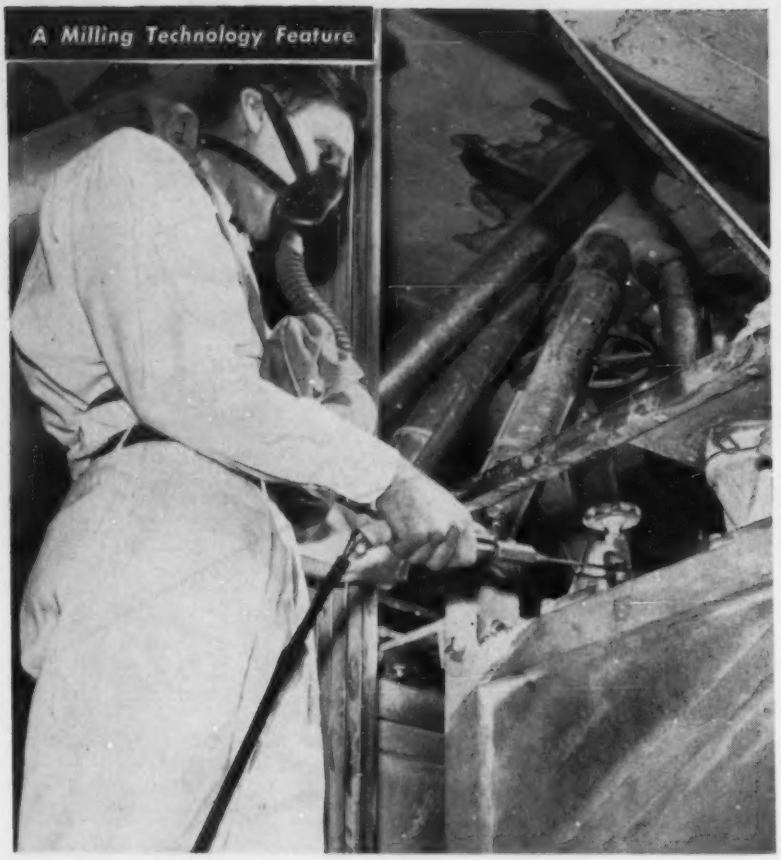
	May 31 1960	May 31 1959
CURRENT ASSETS:		
Cash	$ 3,470,963	$ 2,823,977
Trade receivables (less allowance for losses: $335,000 at each date)	7,578,355	7,234,074
Inventories:		
Wheat, other grains, flour, and millfeed—at market after appropriate adjustment with respect to open commodity contracts, etc.	7,909,159	6,344,382
Formula feeds, beans, and other merchandise—at lower of cost or market	1,141,278	1,186,813
Advances on commodity purchases	561,650	370,419
Containers and supplies—at lower of cost or market	805,404	815,566
Total inventories	10,417,491	8,717,180
Other current assets	549,164	785,631
Deposit for payment of dividend June 1	193,369	193,369
Total current assets	22,209,342	19,754,231
PROPERTY:		
Land, buildings, machinery and equipment	24,022,838	23,437,465
Less accumulated depreciation and amortization	14,654,183	13,688,746
Property (depreciated and amortized cost)	9,368,655	9,748,719
PREPAYMENTS AND OTHER ASSETS	409,390	377,681
TOTAL	$ 31,987,387	$ 29,880,631

LIABILITIES

	May 31 1960	May 31 1959
CURRENT LIABILITIES:		
Notes payable	$ 9,000,000	$ 6,500,000
Drafts payable (for grain purchases, etc.)	273,427	319,471
Accounts payable	1,429,444	1,452,273
Accrued liabilities:		
Taxes on income	489,501	1,154,219
Property taxes	416,095	407,598
Other	1,353,460	1,087,879
Dividend payable June 1	193,369	193,369
Total current liabilities	13,155,296	11,114,809
CAPITAL STOCK AND SURPLUS:		
Common stock authorized, 750,000 shares of $1 par value each; issued and outstanding, 552,482 shares	552,482	552,482
Surplus:		
Capital (principally paid-in)	5,519,084	5,519,084
Earned	12,760,525	12,694,256
Total capital stock and surplus	18,832,091	18,765,822
TOTAL	$31,987,387	$29,880,631

Statement of Consolidated Income and Earned Surplus

	Year Ended May 31, 1960	Year Ended May 31, 1959
Net sales and other operating income	$127,219,034	$126,998,776
Less:		
Cost of sales and operating charges	119,498,322	118,296,727
Selling, general, and administrative expenses	5,391,383	5,392,434
Total	124,889,705	123,689,161
Net operating profit (after depreciation and amortization of $1,116,262 in 1960 and $1,061,503 in 1959)	2,329,329	3,309,615
Non-operating income—net	141,859	88,803
Total	2,471,188	3,398,418
Interest expense	734,444	567,694
Net income before taxes on income	1,736,744	2,830,724
Provision for taxes on income	897,000	1,468,000
Net income	839,744	1,362,724
Earned surplus at beginning of year	12,694,256	12,105,007
Total	13,534,000	13,467,731
Cash dividends on common stock	773,475	773,475
Earned surplus at end of year	$ 12,760,525	$ 12,694,256



Fumigation Can Be of Service . . . Understand It Respect It Use It

Caution! Fumigation Now in Progress

By RICHARD T. COTTON

Everytime you hear of an unfortunate experience with fumigants the need is proven again for better understanding of these insecticides and methods of using them safely.

Dr. R. T. Cotton

Fumigants — simply put—are chemicals which in their vapor phase spell death to insects and animals exposed to their action. Their vapors diffuse and permeate all parts of a bin, building or other enclosure and its contents so rapidly that fumigation provides the fastest, most effective method of eradication of infestations in stored grain and other dry, bulk food commodities.

But they must be used with care and intelligence.

The ideal fumigant would be effective against insects in concentrations harmless to man. Unfortunately, human beings generally are more susceptible to fumigants than insects. To offset this disadvantage the fumigator must become familiar with the properties of fumigants and the hazards connected with their use. He must avoid exposure to heavy concentrations, and utilize the various protective devices and safeguards available. He should avoid taking chances.

Types of Fumigants In Common Use

The fumigants in common use fall into the following three groups: 1.) gaseous; 2.) liquid and 3.) solid. Gaseous fumigants are so designated because they are gases at normal temperatures. Commercially they are liquefied and packaged in cylinders under pressure. When released from the cylinders and exposed to air at normal temperatures, they rapidly change to a gaseous form. Examples are methyl bromide, hydrocyanic acid, ethylene oxide and carbon dioxide.

Liquid fumigants are those normally liquids, and are sold commercially in that form in containers which are not under pressure. When poured from these containers or applied as coarse sprays at normal temperatures, they also evaporate, but at a slower rate. Examples are carbon disulfide, carbon tetrachloride, ethylene dichloride, ethylene dibromide, chloropicrin, propylene dichloride, acrylonitrile and numerous combinations of these chemicals.

Solid fumigants are those which are normally in the solid state, but which give off toxic vapors when exposed to the atmosphere. Examples are calcium cyanide (Cyanogas) and Phostoxin.

Fumigation Methods

Gaseous type fumigants can be applied by forcing them under pressure into mills, storage warehouses, fumigation chambers or under tarpaulins. In the case of hydrocyanic acid, compressed air is used to force the fumigant through systems of tubing and spray nozzles into the enclosure to be fumigated. With methyl bromide the same method can be used or it can be applied by releasing the gas directly from self-emptying cylinders placed at strategic positions within an enclosure.

These two compounds also are well

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• • •

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adapted for fumigating bulk grain in bins, elevators, railway boxcars and flat warehouse storages by the recirculation or forced distribution method. This latter method requires the use of an aeration system. The fumigant is introduced into the aeration system and may be pulled or pushed through the grain as desired.

In general, the system consists of a floor duct or ducts, or a series of perforated lateral ducts radiating from a central floor duct, connected with a blower or blowers capable of forcing the fumigant through the grain with an airflow of approximately 0.1 cfm per bushel per minute, and a return duct or ducts from the blower to the overspace above the grain. The return duct can be located within the bin or warehouse, or on the outside. This system of fumigation has a safety factor in that the fumigant can be applied from the outside, and the lethal vapors removed by the aeration system at the end of the exposure.

Liquid type fumigants can be applied either by the gravity penetration method or by forced distribution. By gravity the liquid is applied to the surface grain as a coarse spray and the vapors allowed to sink by gravity down through the grain mass. In elevator bin fumigation, distribution of the fumigant can be facilitated by introducing aliquot portions of the fumigant to the grain stream at regular intervals as the bin is filled, or in some cases by special applicators which apply the liquid in a continuous flow into the grain stream.

By forced distribution method, the liquid is applied to the surface of the grain and the vapors pulled down through the grain by the aeration system.

Solid fumigants, such as calcium cyanide, are applied by means of an automatic applicator to the grain stream as it enters the bin. It is chiefly adapted for use in grain elevators. On exposure to air, calcium cyanide unites with atmospheric moisture to form hydrocyanic acid.

Phostoxin, a proprietary compound —one of the newer grain fumigants— is applied manually in tablet form to the grain stream as it enters the bin. In flat storages it may be introduced into the upper layers of the grain by the use of probes. On exposure to air the aluminum phosphide, of which the tablets are largely composed, combines with atmospheric moisture to form hydrogen phosphide (PH_3), CO_2, and ammonia.

Precautions in the Use Of Fumigants

All chemicals used as fumigants are poisonous to human beings and animals. Poisoning may occur from breathing the vapors, through the absorption of concentrated vapors through the skin, or as a result of the displacement of the oxygen in the enclosure by the fumigant.

Blistering of the skin may result if liquid fumigants are spilled on gloves, clothing or in shoes, if the skin remains in contact with the soaked articles for any appreciable length of time. In some cases blistering of the skin may be caused by contact with perspiration-soaked clothing which has absorbed chemicals through exposure to heavy concentrations of fumigant vapors while applying fumigants to bins of grain.

Fumigants are more active chemically, and people more susceptible to their action at high temperatures. Some fumigants, such as hydrocyanic acid, hydrogen phosphide and methyl bromide, are more deadly to humans and more rapidly lethal than some of the other commonly used fumigants. The lethal effects of a fumigant are considered to be the product of the concentration times the length of the exposure. Although it is important to avoid exposure to a heavy concentration for even a short period, it is equally important to avoid long exposures to weaker concentrations.

Some fumigants are applied under pressure. If hoses, tubing or other equipment used in applying fumigants are old and worn, leaks can occur and the operator may be showered with the fumigant. With a highly toxic gas the results may be quite serious.

It is almost impossible to entirely avoid exposure to fumigant vapors, or contact with small quantities of the liquid fumigant while engaged in treating grain, flour mills or warehouses. However, professional fumigators who have familiarized themselves with characteristics of the chemicals they use and methods of handling them safely have very few accidents.

They leave nothing to chance.

Employees delegated the job of fumigating should be thoroughly trained in their work by professionals, and should learn to handle different fumigants safely, without risk to themselves, their associates and the general public.

They should test all equipment before starting a job and replace all worn, damaged or broken hose, washers or corroded metal parts. Many fumigants corrode metals and attack rubber washers and hose. Pumps used for handling fumigants should have brass fittings. Fumigants, such as carbon tetrachloride, ethylene dichloride, ethylene dibromide, methyl bromide, or other halogenated hydrocarbon fumigants, should not be used in equipment made of aluminum, magnesium or die cast metal.

There is no reaction to steel, brass or stainless steel, so these metals are best for tanks and piping installations. Polyethylene is useful for gaskets as are vellumoids and super-heat gaskets. Well oiled leather is excellent for pump plungers. Hose should be plastic lined to resist action of fumigants; a polyvinyl alcohol-type rubber is satisfactory. Saran and polyethylene tubing are satisfactory for carrying methyl bromide from cylinders.

Some fumigants are flammable and explosive at certain concentrations and must be handled with caution. To reduce the fire hazard, some chemicals

There are accepted ways of using fumigants safely, mainly through better understanding of the chemicals available, the potential which they have for doing harm as well as good. Dr. Cotton, author of the book, "Pests of Stored Grain and Grain Products," will be a regular contributor to THE Northwestern MILLER. He retired recently from the U.S. Department of Agriculture after a distinguished career and is devoting his spare time to writing, lecturing and consultation work. He was a member of the sanitation committee of the Association of Operative Millers until his retirement in 1957.

are mixed with non-flammable compounds. The danger from fire is usually greater at the time of application and before the vapors have become thoroughly dispersed through a bin or warehouse. Remember that sparks caused by friction or electrical apparatus of all types may set off fires in the presence of explosive concentrations.

Before Starting

Before starting to fumigate a mill or warehouse, police and fire departments should be notified to prevent serious accidents in the event of fire while the enclosure is under fumigation. In the case of individual bin fumigations this is not usually necessary. With a mill or warehouse the entire building must be searched to make certain no visitors or unauthorized personnel are still on the premises. All entrances should be locked and placarded with warning signs.

After fumigant has been introduced into a building, a watchman should be posted as an additional safeguard against entry of people unacquainted with the fact that the building is under fumigation. At the end of a fumigation, the building must be thoroughly aerated before business personnel or the general public is allowed entry.

Whenever possible, windows, doors and ventilators should be opened from the outside to allow heavy concentrations to escape before workmen, wearing gas masks, complete the ventilation by entering the building to complete the operation of opening up and to start ventilating fans. It is particularly important at this time to prevent unauthorized persons from walking into the building out of curiosity. The presence of dangerous concentrations of fumigants in an enclosure can be determined by the use of a halide leak detector, or a TC gas analyzer for methyl bromide and similar gases or an HCN test kit for hydrocyanic acid.

Fumigators should always work in pairs on all fumigation jobs. If one operator gets into trouble the other can usually save him by helping him to the open air. If the fumigant is spilled on clothing, gloves, or in shoes, these articles should be removed immediately and the skin allowed to dry. Soap and water should be kept available so that the portion of the body wet with the fumigant can be washed. Ordinarily the fumigant will evaporate rapidly after wet clothes are removed without serious consequences. Fumigant-moistened clothing, shoes or gloves should not be worn again until they are dry and the fumigant all evaporated. If the wet clothes are placed in the sun they will soon dry.

When fumigation work is started in an elevator it is often continued for an entire day—or for several days at a time. With the customary method of applying fumigants into the grain stream, the atmosphere in the average head house is certain to contain a greater or lesser concentration of the fumigant being used.

Whenever it is necessary for workmen to enter bins of the flat bottom type to shovel out grain not removed by gravity, special precautions must be taken to see that no dangerous concentrations of gas are present before

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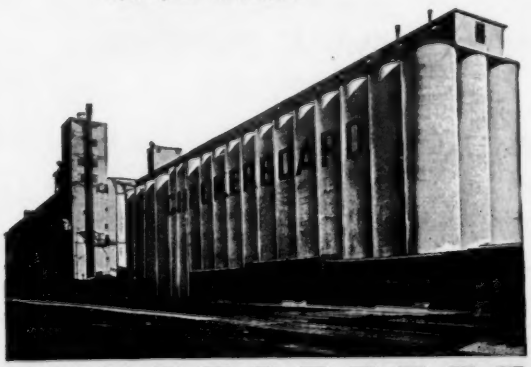

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workmen enter the bin, unless gas masks are worn.

If the fumigator must expose himself to vapors of fumigants in the course of fumigating bins of grain, warehouses or mills, or must enter enclosures being fumigated to open them for ventilation—or for any other purpose—he must protect himself by wearing a gas mask of the proper type.

There are two general types. One has a face-piece and a supply of oxygen or compressed air provided from a pressure cylinder carried on the operator's back, or from a remote source through a hose line. The other, most frequently used, has a face-piece and a canister. Gas-laden air is drawn through the canister by the act of breathing and the gas removed by filtration. The face-piece of rubber or rubberized fabric can be adjusted to fit tightly across the forehead, along the cheeks, and under the chin, and is connected by a short flexible, noncollapsible tube to a sheet-metal canister containing absorbent materials. A light harness or knapsack is provided to suspend the canister from the shoulders or to strap it to the chest. The face-piece is provided with shatterproof glass eyepieces and a check valve through which exhaled air escapes. At the bottom of the canister is a check valve, which opens only to admit air.

Some canister types of masks have the face-pieces reduced to a mouthpiece and a nose clamp. The wearer breathes though a rubber device inserted and held in the mouth. This type does not protect the eyes from irritating gases and is not recommended.

For each gas likely to be encountered in fumigation work, a special canister is available. Most canisters are charged with materials intended to absorb only a limited number of closely related gases, although the all-service canister is designed to protect against a combination of gases.

A color code has been adopted by the Bureau of Mines whereby canisters designed for different gases are assigned a specific color, e.g., a white canister gives protection against low concentrates of acid gases such as hydrocyanic acid and sulfur dioxide; a black canister against organic vapors such as carbon disulfide, carbon tetrachloride, chloropicrin, ethylene dichloride, and methyl bromide; a yellow canister against a combination of acid gases and organic vapors, and a red canister against a combination of gases. A list of gas masks of different makes which have been approved by the U.S. Bureau of Mines is given in Bureau of Mines Information Circular 7636, and is available free from their Pittsburgh office.

Before using a canister-type gas mask in fumigation work, the fumigator should realize that it has certain limitations:

1. A mask of the type described cannot be used safely in an atmosphere seriously deficient in oxygen. A gas mask ceases to be adequate if, in the presence of an excess of a simple asphyxiant gas, the oxygen content of the air falls below 14%, even though it removes any toxic gas present in the respired atmosphere. Not enough oxygen is available to support life.

2. The ordinary gas mask does not afford protection against heavy concentrations of a fumigant such as might be encountered in a grain bin or atmospheric vault under fumigation. Most canisters are designed to protect

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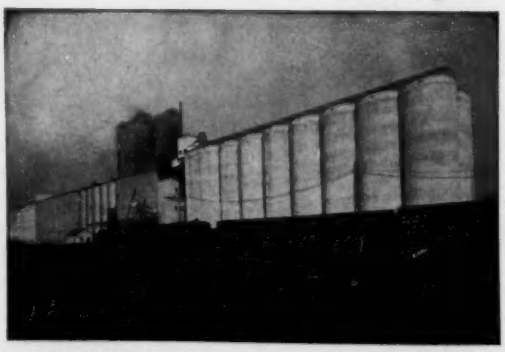

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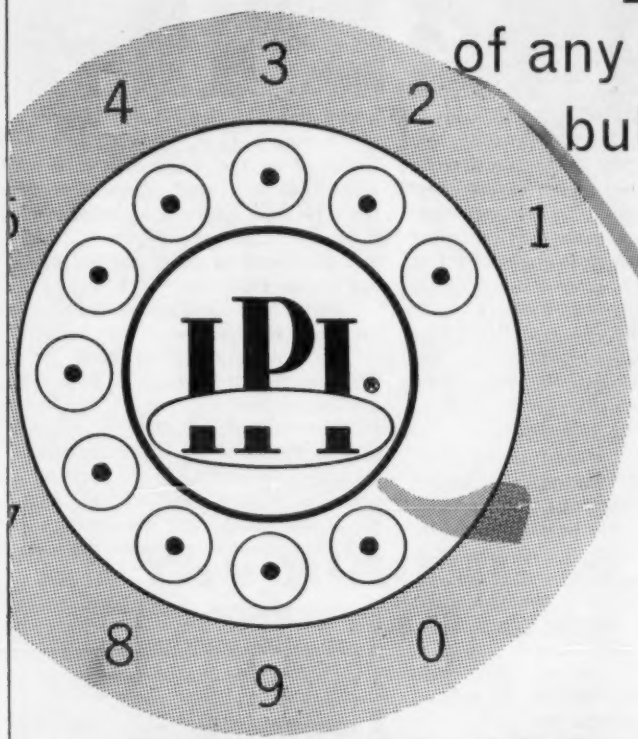

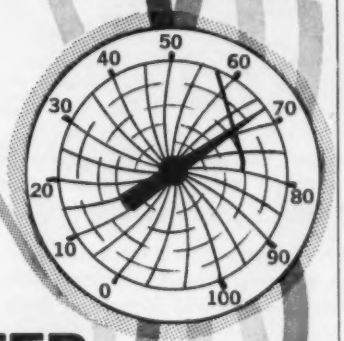

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against concentrations of less than 2% of toxic gases in air. In ordinary mill fumigation work, concentrations heavier than this are not usually encountered.

3. The life of the canister is limited; it can absorb just so much gas and then must be changed. A good practice is to discard canisters after one-half hour of actual use in air containing a toxic gas. Each canister should be marked to indicate the total period it has been used. Spent canisters should be destroyed.

Unless a gas mask fits tightly, is free from defects and does not leak, it is useless. Before entering a gas-filled enclosure test the mask for tightness by placing the hand over the lower opening of the canister and inhaling. If the sides of the mask pull in against the face and it is not possible to get any air, the mask is tight. If not, the straps which hold it in place against the face should be adjusted until the mask will not leak air around the sides of the facepiece after normal movement of the head.

When a canister is received it will be stoppered at the top with a cork and sealed at the bottom. The cork is removed when the canister is attached to the mask. The bottom seal should be removed just before the mask is donned. This seal can be replaced when the mask is not in use. Some canisters may deteriorate in storage. If too much resistance to breathing is experienced with a new canister it should be discarded and a fresh one installed.

It must be realized that fumigants can be absorbed directly through the skin. Do not take it for granted that the wearing of a gas mask will afford complete protection. Heavy gas concentrations are particularly dangerous, and care should be taken to avoid exposure to them, even though a gas mask be worn.

First Aid

In case of poisoning by toxic gases or asphyxiation due to lack of oxygen, remove the victim to fresh air as soon as possible and call a doctor.

If breathing has stopped, is weak or intermittent, or is present in only occasional gasps, artificial respiration, preferably by the prone-pressure method, should be given persistently until normal breathing is restored.

Circulation should be aided by rubbing the limbs of the victim and by keeping the body warm.

The victim should be kept at rest, lying down to avoid strain on the heart.

A resuscitator should be kept on hand for emergencies during a fumigation. «

International Reorganizes Into Four Major Operating Divisions

Malcolm McDonald

L. E. Workman

John Tatam

John B. Bean

A year of study to cope with growing pains—to improve its management structure—thereby fitting operations to current conditions and preparing for future expansion, has resulted in realignment of the top echelon of International Milling Co.

Along with this comes some shifting of key personnel to instrument the plan, and formation of four major divisions, all of which probably will be completed by Oct. 1.

Malcolm B. McDonald, vice president and the hand that has guided U.S. flour milling operations and finance, now assumes responsibility also for all U.S. bakery, durum and grocery products sales.

In administration of the U.S. flour milling division, John A. Hendrickson, vice president, will supervise all U.S. flour milling production, along with responsibility for engineering, milling and U.S. purchasing.

Lloyd E. Workman, vice president, continues to head the U.S. Supersweet Feeds division, with responsibilities for both production and sales activities.

To International's Canadian affiliate, Robin Hood Flour Mills, Ltd., goes another veteran, John Tatam, to become executive vice president and chief executive officer of that operation. He will continue as a vice president and a director of International.

Mr. Tatam will take charge of all Canadian sales and manufacturing activities and also will be responsible for the firm's export business from North America, headquartering at Robin Hood's general offices in Montreal.

John B. Bean, vice president, is responsible for all manufacturing and sales activities in the company's recently formed overseas division which supervises the operation of three mills in Venezuela.

Each of the four divisional heads will report directly to Atherton Bean, firm president.

Also reporting to the president will be P. Norman Ness, vice president, the man at the head of the firm's grain, research and financial functions; H. E. Howlett, secretary and general counsel; and Wayne T. Kirk, vice president, in charge of personnel and public relations.

Charles Ritz, chairman of the board, explained the changes in this manner:

"For many years we have been functionally organized. This has worked successfully, and yet we have felt increasingly that each of our main operational segments has grown to such size that it should become a separate division, with certain company-wide functions continuing as staff departments to serve the divisions." «

CINNAMON ROLLS and bran muffins are two of the newest, full-color bakery streamers available from International Milling Co. representatives or direct from company headquarters in Minneapolis. Other streamers on pumpkin, blueberry and cherry pie, Danish coffee cake, pound cake, shortcakes, hot cross buns and fruit cake also are available. A new streamer is added to the series every other month.

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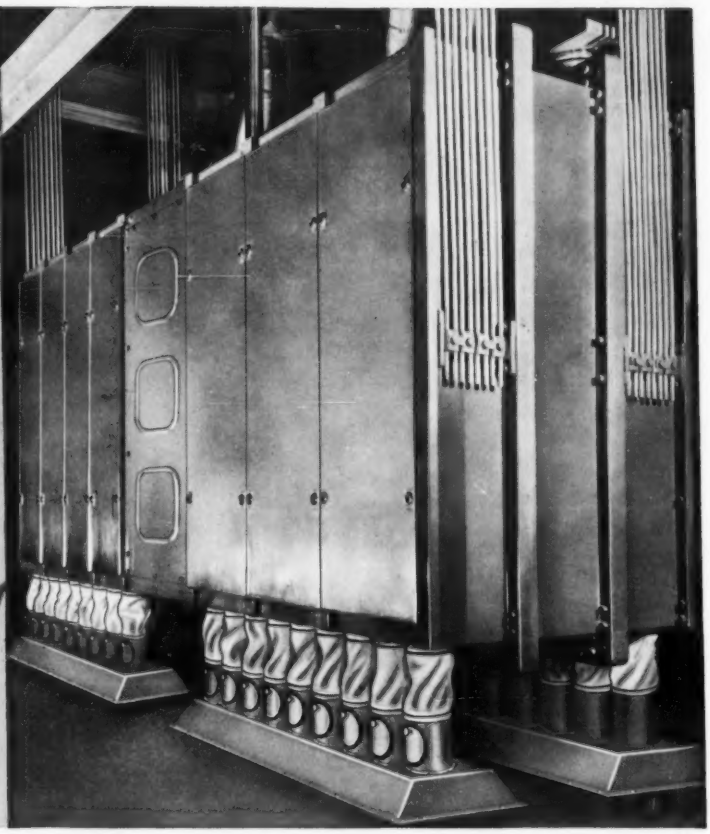

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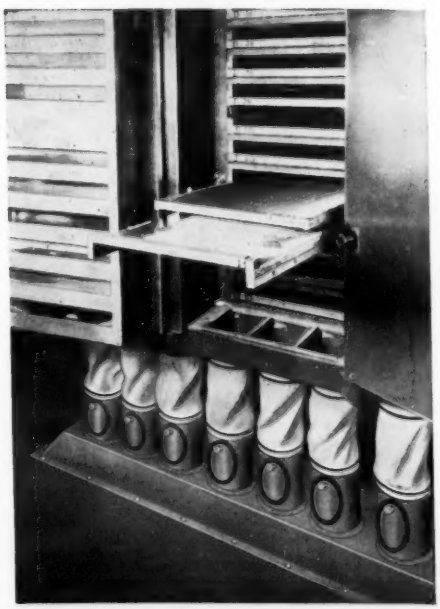

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By R. K. Bequette, R. B. Potts and C. A. Watson

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Canadian Output Of Wheat Flour Shows Increase

Canadian wheat flour output for June and 11 months of the 1959-60 crop year showed gains over the comparable previous periods. The single month of June displayed the most encouraging increases when compared with the previous month and the corresponding period of 1958-59.

Wheat flour exports dipped slightly for June but gave indications of a gain for the 11 months of 1959-60 against the corresponding 11 months of 1958-59.

June production amounted to 3,648,000 cwt., up 12% over the May figure of 3,253,000 cwt. and 8% greater than the previous June offtake of 3,387,000 cwt. Also, it was 5% above the 10-year (1950-59) average June production of 3,471,000 cwt.

Ontario winter wheat flour included in the June total amounted to 211,000 cwt. compared with 247,000 cwt. for June, 1959.

Production of wheat flour for the first 11 months (August - June) amounted to 37,146,000 cwt., 2% above the 36,516,000 cwt. produced during the corresponding period of the 1958-59 crop year.

Ontario winter wheat flour production for the first 11 months of the 1959-60 crop year totalled 2,257,000 cwt., compared with 2,476,000 cwt. milled during the August-June period of 1958-59.

Rate of Operations

Mill operation for June averaged 82.3% of capacity computed on a 26-day working period and a daily capacity of 170,000 cwt. Mills reporting in May averaged 76.6% of capacity for 25 days and a daily capacity of 170,000 cwt.

Wheat milled for flour in June amounted to 8,270,000 bu., exceeding by 8% the 7,664,000 bu. milled in June, 1959. Ontario winter wheat in the June total was 500,000 bu. against 575,000 bu. of this type milled in June, 1959.

Export Figures

According to preliminary figures, wheat flour exports for June amounted to 1,072,072 cwt., compared with a revised figure for June, 1959, of 1,305,461 cwt. Total flour exports for the first eleven months of the 1959-60 crop year amounted to 14,694,198 cwt. compared with a revised figure of 14,606,831 cwt. for the corresponding period in the previous crop year. «

THIS NORWEGIAN SCENE is beautiful and practical. It shows the plant of the milling group A/S Vaksdal Molle, Bergen. Buhler Bros., Uzwil, Switzerland, is remodeling the plant. The mill has a capacity of about 4,000 cwt. flour, 24 hr. running, also approximately 850 cwt. rye flour in 24 hr. and 1,300 cwt. rye graham flour. Screen rooms are to be added, complete pressure pneumatic systems for the cleaning sections and pneumatic suction for the rye mills, along with separators, washers, magnetic separators, cockle cylinders, aspiration plants, planslifters, bran finishers and piping. Buhler plans to carry out the remodeling with a minimum of down time.

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Old Firm With Young Ideas Installs New Bulk Facility

Modernization has come to the Mauser Mill Co. at Treichlers, Pa., an old, established firm with some new ideas about its plans for the future.

Mauser officials put $150,000 into a bulk flour station, and now, some six months after installation, operating results are being termed "excellent" and production has increased.

The new storage facilities house six bulk tanks manufactured by the Day Co., which also equipped the installation with twin screw feeders operated by variable speed drivers.

Each of the six large bins holds 2,400 cwt. flour. These, together with a smaller bin of 250 cwt. capacity and the scale bin of 350 cwt., make a total storage of 15,000 cwt., or a 15-day run from the Mauser "A" mill unit.

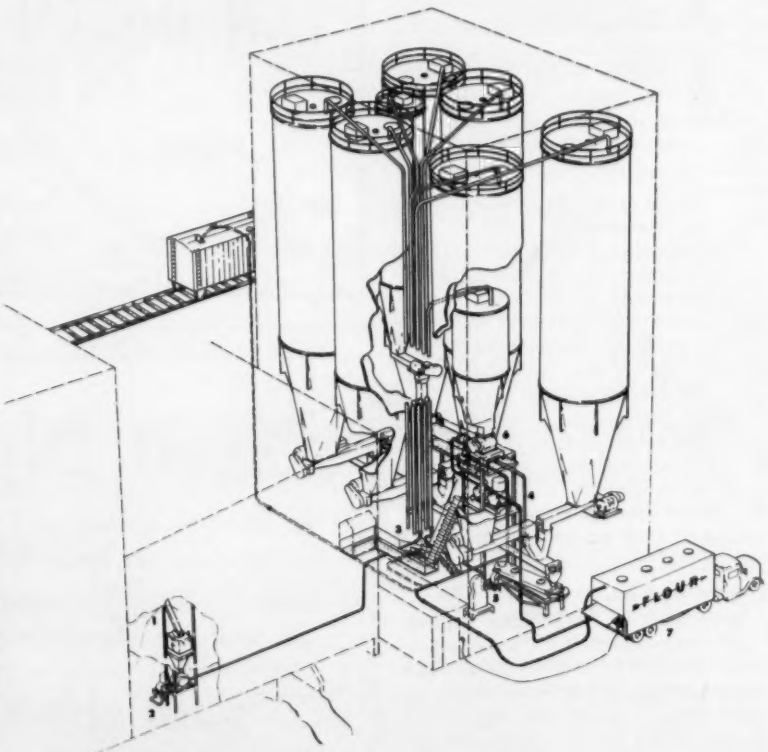
The company decided to go as far as possible in modernizing its operation, so collecting conveyors, a Day rebolter, 25 h.p. blower and two feeders, a Howe bin scale, air circulation fans at the top and bottom of the buildings—plus hot air oil heat—were added to the program.

New Building

The new Mauser building is constructed on a concrete base. The interior is lined with galvanized steel and fiber glass insulation. The exterior is aluminum with an embossed finish.

Mauser started operation in 1882 and was incorporated in 1902. The "A" mill unit has 100 cwt. capacity and the "B" mill unit a 300 cwt. cacapity. In 1953 the "A" mill unit was modernized and rebuilt.

In announcing the expansion and new bulk flour station, J. M. Lerch of Mauser Mill said, "We believe our new bulk station is a giant step forward in modernizing our plant—it provides not only for improved production but also better quality products and service to our customers. Today, with more and more emphasis being placed on mechanization and savings, we believe we are in a position to supply our customers with fine



IN THIS CUT-AWAY drawing of Mauser Milling Co.'s new bulk storage installation at Treichlers, Pa., can be seen all of the six bulk storage tanks and the twin screw feeders. The bulk flour station is the latest improvement by the firm which dates its origin back to 1882.

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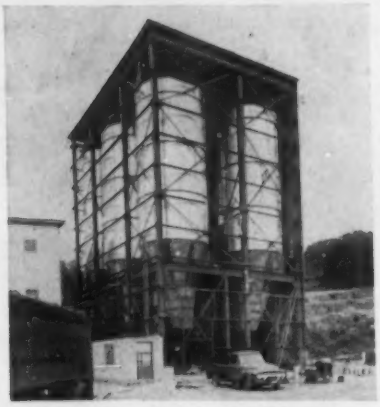

AN EXPOSED view of the Mauser Milling Co.'s new bulk flour station is shown before the siding was completed. It permits a look at four of the six bulk storage tanks which comprise the new installation.

products at lower costs through the bulk facilities we have installed at our mill." «

THIS PAINTING, representing a loaf of bread, was made by Mrs. Harry L. Oppenheim of Lincolnwood, Ill. Her work, made entirely of barley, buckwheat and lentil, won honorable mention in the Clairol Art Foundation Fine Arts competition for beauticians and now is one of 72 winning paintings being displayed at major cities across the U.S. Unexplainably, wheat is not mentioned as one of the grains used by Mrs. Oppenheim for her painting—which could cut her score to a big zero in a couple of familiar industries.

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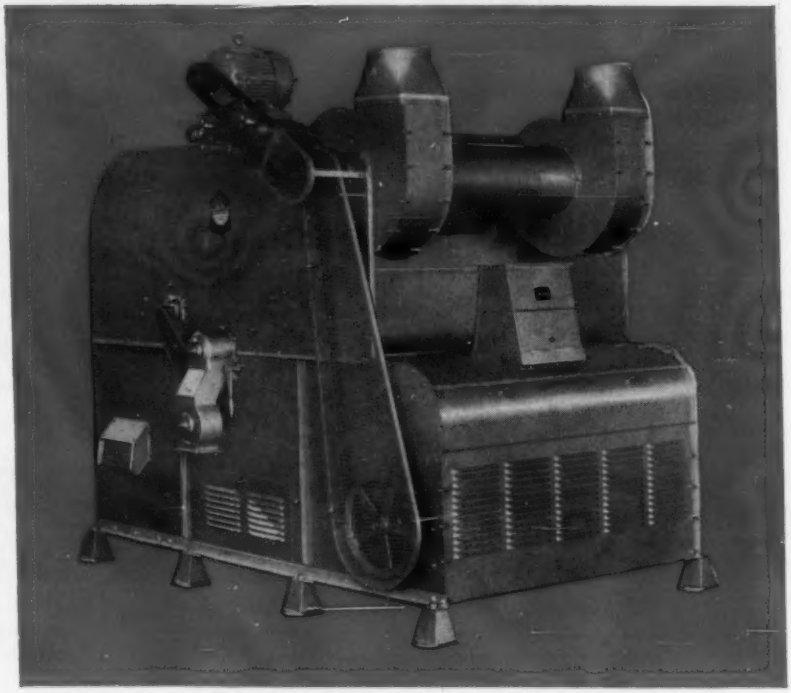

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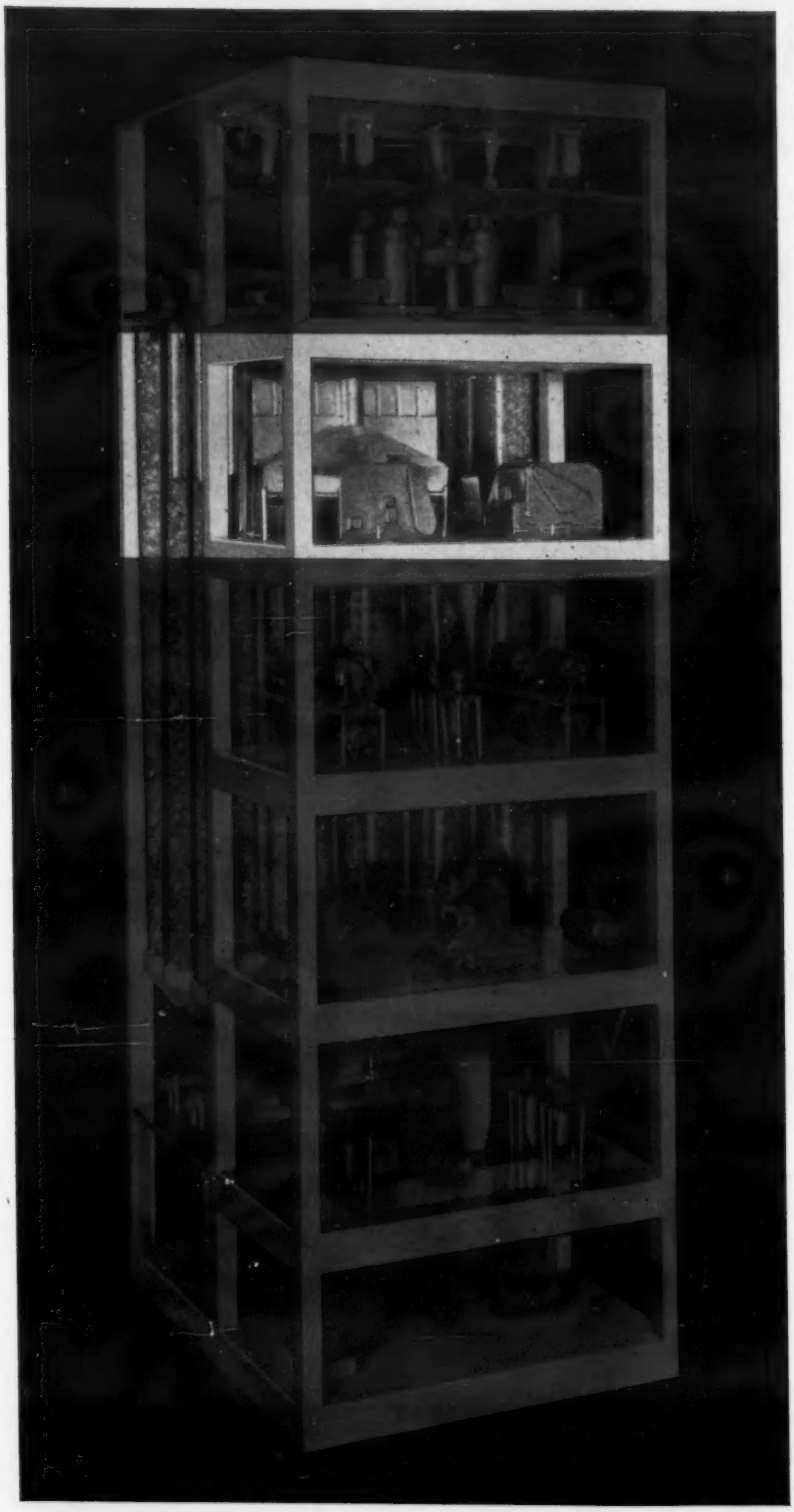

Typical SIMON-CARTER wheat cleaning house ...including pneumatic conveying.

Standard Milling Releases Annual Fiscal Report

Standard Milling Co. has released its financial statement for the fiscal year ended April 30, showing some dips in sales and income, reasons for the declines, and some factors to offset them.

Net sales of manufactured products for the year amounted to $15,985,588 compared with $16,156,274 in the previous year. The decrease in dollar sales, however, was one of dollars only, company officials explained, as the quantity volume for the two years was almost identical.

Ralph Friedman, Standard's chairman of the board, and Paul Uhlmann, president, point out that the dollar loss in sales was, for the most part, due to lower grain prices and the highly competitive problem within the milling industry, all of which worked for reduced gross margins per unit sold.

Gross income for the year completed totaled $2,859,258 for merchandising and grain services, compared with $3,260,426 in the previous period.

In response to stockholders, Mr. Friedman and Mr. Uhlmann stated:

"A great deal of grain now being raised in the U.S. is being shipped export. As stated previously to stockholders, we have entered into a lease arrangement covering the operation of a new, modern export elevator at Pascagoula. «

STANDARD MILLING CO.
and Subsidiary Company
CONSOLIDATED STATEMENT OF INCOME AND RETAINED EARNINGS

	—Year Ended April 30,— 1960	1959
Sales of products ..	$15,985,588	$16,156,274
Grain merchandising profit and services	2,859,258	3,260,426
	$18,844,846	$19,416,700
Cost of goods sold and services	16,181,338	16,169,865
Gross profit	$ 2,663,508	$ 3,246,835
Selling, advertising and administrative expenses	1,884,958	1,932,968
Income from operations	$ 778,550	$ 1,313,867
Deductions from income	336,322	160,422
Income before income taxes	$ 442,228	$ 1,153,445
Estimated income taxes, federal and state	244,000	582,000
Net income for the year	$ 198,228	$ 571,445

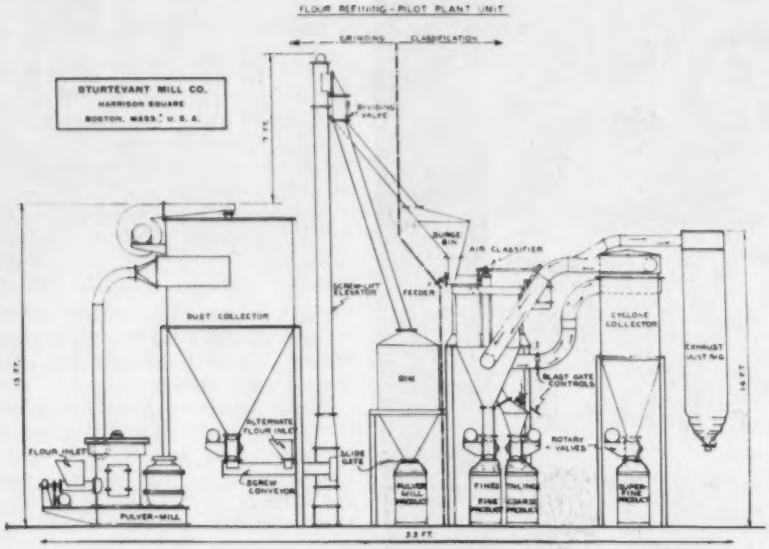

FIG. 1. SCHEMATIC DRAWING

For some time Sturtevant Milling Co.'s flour refining system, which produces three grades of flour in one operation, has been the subject of considerable conversation in milling circles. In the accompanying article Mr. Drake goes into detail to describe the system's operation, along with some of the problems encountered and Sturtevant's hopes for its position in the milling industry.

Flour Refining Techniques

Sturtevant's System of Grinding, Classification

By AUSTIN T. DRAKE

Since formation of the grain processing division of Sturtevant Mill Co. one year ago I have answered many requests to explain the Sturtevant flour refining system. Sturtevant Mill Co. is indeed pleased at this response to our more active participation in the milling industry. I personally am equally pleased and very flattered because of the many invitations to talk which have come my way. However, and much to my chagrin, I find the invitations are forthcoming not because of any ability I might possess as a speaker; nor can we construe this to mean that the milling industry is falling over itself to purchase equipment from Sturtevant Mill Co.

Austin T. Drake

Rather, putting it quite bluntly, it is the desire of various milling companies to find out what is transpiring in their own industry and to receive information which their fellow members of this industry see fit not to disclose.

This was brought quite startingly to my attention last winter when I was called before the technical committee of the Association of Operative Millers, convening in Minneapolis, and asked to explain to members of this committee the work which we are doing in flour refining. The technical committee members of AOM are selected from among the upper brackets of milling know-how and are recognized authorities on many subjects pertaining to their industry.

I was only permitted to be present at this meeting for the length of time necessary for me to present the information, which I will be giving to you here.

Sometime later, and prior to the technical conference in St. Louis, I received a brief report of the minutes of this meeting which pertained to my participation at that time. It appears that, after I had been dismissed from the meeting, various members of the committee discussed the material I had presented, and several direct quotes were contained in the report sent to me.

I would like to quote one remark made by a very well-known member of the committee:

"I would like to suggest that the committee put forth its effort toward getting people who manufacture this type of equipment to come in and tell us what is going on. I don't think we are going to find out what we want to know from our other miller friends."

In many of the talks I have given on the subject, I, too, have taken a crack at the "veil of secrecy" which seemingly surrounds the impact grinding and air classification of flour. Undoubtedly I would have reason to object to this because it means that Sturtevant Mill Co. must engage upon an educational program in addition to a selling program to realize profits from its investment.

The knowledge which Sturtevant possesses of flour refining has been gained the "hard way" — by constant experimentation and thorough research. As we had to rely on information from our "potential customers" rather than "users" of our equipment in order to know where to begin, we have made several false starts. We are now, however, quite firmly on the right track, and sales are being made to your industry with success assured.

We intend, as we progress, to reveal all the information that we possibly can without any direct violation of any pledge of secrecy made by us to a customer.

Fig. 1 shows in schematic form the

complete flour refining system developed by Sturtevant. All major component parts necessary for its operation are shown and will be further explained.

In presenting this system in its entirety we feel that we are showing a straight-forward presentation and are not trying to "soft pedal" the need for auxiliary equipment such as air locks and dust collectors, or the space requirements.

Note from the schematic drawing that we are able to produce three different grades of flour which vary in micron size and starch-protein levels. All three, of course, will vary also in viscosity, absorption and other analyses which are customarily conducted.

The grinding unit is our newly developed pulver-mill (Figs. 2 and 4), an air-swept impact mill advocated by the technical people of the industry. Separation of the flour or endosperm into its various fractions is accomplished on the Sturtevant air classifier (Figs. 2 and 3), which has occupied a very favorable position in other industries for many years.

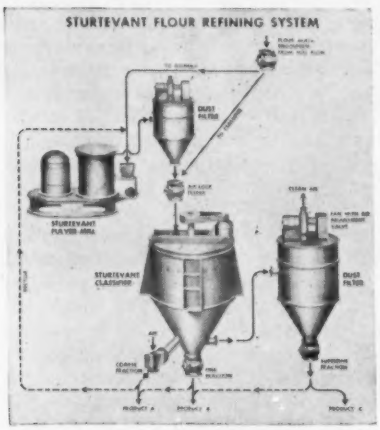

FIG. 2

Although quite similar in outward appearance to our units with which you have worked before, it has been changed quite drastically to meet technical requirements of the flour milling industry.

Fig. 3 is an artist's conception of the interior of the Sturtevant flour classifier and shows the method used to effect a separation between fine and coarse particles.

This sketch also shows the path of air through the unit as it removes the fines and conducts them to suitable outlets. The flour or endosperm, which enters through an air-lock arrangement, falls by gravity through a hollow tube surrounding the shaft supporting the rotor assembly.

The product is discharged through ports to a distributing plate which whirls it out centrifugally into the rising air stream. The air, containing the "fines" product, is pulled through a rapidly revolving selector blade assembly which is adjustable for degree of fines cut, and is forced into the outer chamber of the classifier, where a settling-out of most of the fines occurs.

The fines, separated from the conveying air, are ejected via an air-lock at the bottom. The coarse product, from which the fines have been removed, is contained within the inner chamber and is spouted out at a point above the discharge of the fines. A further separation of the fines is made by the application of an external dust collector which receives the air containing the super-fines of lowest micron size.

In the original applications of this unit, we specified, and installed, cloth filters to receive this product and consigned the clean air to the atmosphere. Now we are advocating, and installing, high efficiency cyclones which trap the super-fines. We now return

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the effluent air from the cyclone back to one of the air-inlet ports of the classifier. This makes a closed-circuit type of air circulation and requires only that approximately 10% of the air used be taken care of by a bleed-off line regulated by a valve.

The 10% of bleed-off air can be consigned to normal flour mill general

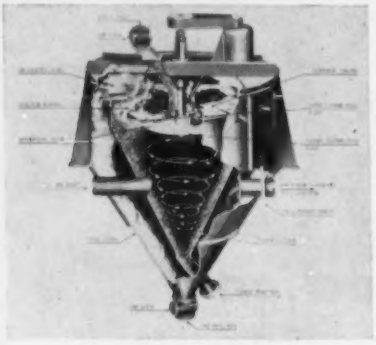

FIG. 3

exhaust systems and normally is equivalent to only the amount of air utilized on "roll suction" from a 9 in. by 30 in. double roller stand. This method of utilizing the high efficiency cyclones, with a return of the air to the classifier, results in drastically reducing the cost of the classifier installation. Fig. 4 is a photograph of the Sturtevant pulver-mill utilized to grind the flour prior to classification. In some installations of the flour refining system, a re-grinding of the flour is not considered necessary and this particular phase is eliminated.

However, most flours do require regrinding in order to free larger amounts of proteinaceous matter for subsequent "shifting" in the air classifier.

The flour is uniformly fed, via a variable-speed conveyor, through the casing of the impact mill, where it meets the impact action of three sets of revolving, rigid, impactor hammers. Air is admitted to the mill via adjustable ports in the bottom and is drawn through the product, while at the same time causing a swirling, centrifugal movement of product and air.

Stationary Impactors

Projecting from the liner of the mill are stationary impactors which intermesh with those on the spindle shaft for maximum grinding effect. Spaced at intervals, in a vertical position around the casing, are half-round metal bar obstructions, which serve to create a bounce-back of larger particles into the grinding area for additional reduction.

The ground material moves upward, pulled by suction of the fan at the top. This fan is encased in a volute housing for added efficiency and the product is blown to a suitable collector receiver. Between the upper fan and the grinding area is placed a series of revolving rejector bars which serve to reject back to the grinding zone particles of larger diameter than desired in the finished product.

These revolving rejector bars act somewhat like the selector blade assembly in the air classifier, and result in a very uniform final product which will analyze within a narrow band of micron range.

The rejector bars are removable and degrees of grind can be controlled by the number of bars used. Another way of regulating the degree of grind, other than the r.p.m. of the rotor, is accomplished by adjusitng the amount of air entering at the bottom of the mill or by changing position of a blast gate placed in the piping between the fan and the collector.

As the product to be ground is constantly supported in air, and no close tolerances exist between rotating and stationary grinding members, the unit does not cause an appreciable rise in temperature of the ground product. This unit will operate on products such as DDT, which has a low melting point and is extremely viscous in its concentrated form. With this negligible heat rise, there is no deleterious effect, from the reduction accomplished, in the resulting wheat flour product.

This, as you will know, is important, because adding excessive heat to flour will cause a drastic fall-off in baking qualities. The pulver-mill is also finding much favor in other grain processing industries because of its high capacity performance and low horsepower requirements. We are now grinding, besides flour, flour middlings streams normally reduced on roller mills; rolled oats; ground soybeans; corn "granules" and other products.

Test Work

Much of the investigation of flour refining calls for the test work to be conducted on the various flours, so we have been asked many times for laboratory size units which can be purchased by people wishing to perform experiments within their own plant.

We do not manufacture laboratory sizes in either the pulver-mill line or the air classifier equipment. In our Boston laboratory, which we use to run customers' samples, we employ regular production units which can be utilized on small sample lots.

In answer to the request for pilot plant and laboratory set-ups, we are presently providing a complete pilot plant unit (Fig. 1). All of the necessary equipment for its operation, with the exception of containers and starting equipment, is included in the grouping.

The smallest air classifier which we manufacture is the 3-ft. diameter size, and it is capable of processing up to 50 cwt. per hour of flour.

With this unit we supply a 60 h.p. pulver-mill which will regrind the flour at the 50 cwt. per hour capacity level. Collecting equipment for both the pulver-mill and the air classifier are supplied either of our own manufacture, or purchased from outside sources. This grouping can be installed in one compact area, or the units separated on several floors to suit the particular space available. When grouped together the space requirements run approximately 33 ft. long by 22 ft. high by 6 ft. wide.

For Steady Production

While this unit is spoken of as a pilot plant or laboratory set-up, it can be used also in steady production by providing suitable means of taking away the separates from the air classifier. Increase in capacity of this grouping can be had by merely substituting larger size classifiers and larger motors on the pulver-mill grinder. It can be separated into a grinding or classification stage, as a means of collecting the product from the pulver-mill, without going to the classifier.

A wide variety of different requirements have been forthcoming from the soft wheat milling area. Some mills are principally cake flour producers, and they wish to have their flour ground finer with a small percentage of very high protein removed via air classification to improve the cake baking properties of their product. Some mills wish to produce only cookie and cracker flours.

For us to satisfy requirements of this nature, it has been necessary that we establish a fully equipped laboratory in which production-size units are placed for testing customers' samples. The services of this laboratory are available to all, and it has proven a very valuable source of information for both our customers and ourselves. «

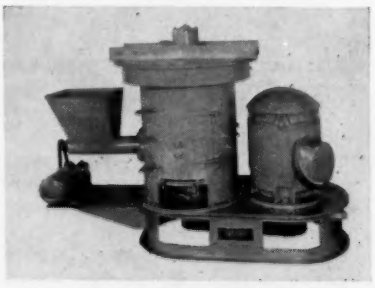

FIG. 4

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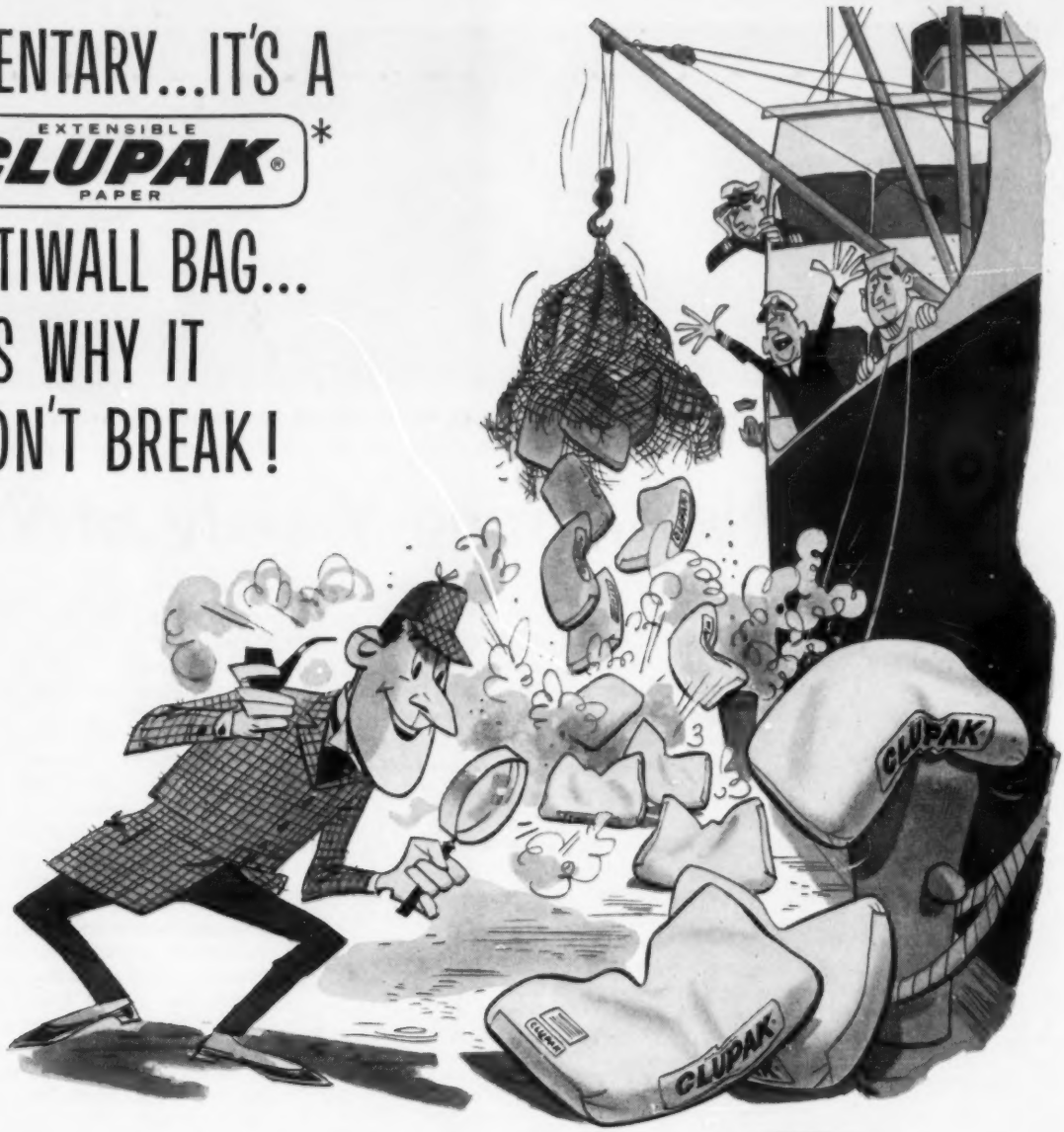

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Behind the Harvest Lies the Search for Better Wheat, an Improved Product

New Strong Variety of Wheat

The search for better wheat varieties is endless. Requirements of farmers, millers and bakers grow steadily more exacting. Thus, wheat breeders never complete their job, and hundreds of new wheats are always under test in the search for varieties which will meet the specific needs of everyone concerned.

In the hard winter wheat area of the Southwest, the search has been for better wheats with stronger gluten properties. And along this line, a comparatively new wheat — a variety named Rodco—this year came on the market in significant commercial quantities. Rodco shows great promise. It is a wheat with a combination of the yield and growth characteristics the farmer wants and an exceptionally good gluten quality for the miller and baker.

Rodco is not designed to be a wheat used straight in a bakery flour. Its mixing time and tolerance is much stronger than the average southwestern wheat, ranging on the farinograph from 10 to 25 min.

This makes Rodco an excellent blending wheat, suitable for strengthening the more widespread mellower wheats in producing flour of the kind that most modern bakeries require for efficient operation.

One outstanding characteristic of Rodco is its good baking performance; it produces a loaf of excellent quality. Many wheats of extremely strong gluten will not do this. This combination of rugged gluten quality and good baking characteristics is the thing about Rodco that impresses cereal chemists. One commercial laboratory operator commented that he had seen Rodco wheat of 10% protein which would stand up in the bakery against a 12% protein bakery mix and produce just as good bread.

This year abundant rainfall has brought about some fantastically good yields per acre, but at the same time has lowered the protein level of the wheat berry in all the areas where these conditions occurred. The protein average of the 1960 hard winter wheat crop, according to the Kansas State Crop Reporting Service, is about one percentage point below the 10-year average and in excess of two percentage points below last year's average. Although Rodco is averaging lower in protein, too, its gluten quality is such that it is still producing flours of strong characteristics. It still has the power to carry mellower wheats in the mill mix.

Rodco made the list of wheat varieties in the Kansas Crop Reporting Service survey for the first time in 1960 when this wheat was reported on .9% of the total wheat area. This tied Rodco with Cheyenne for 10th place on the list. However, Rodco and Cheyenne were fourth among strong gluten varieties. The more popular stronger gluten wheats in Kansas are Bison, Ponca and Comanche, and these three account for about 97% of the acreage planted to strong gluten wheats, and also for about 37% of all wheat acreage in the state. Although first introduced in Kansas, Rodco now is grown in other hard winter wheat states also.

Growers Impressed

Wheat growers have been quite impressed with Rodco, and for this reason, the variety seems destined for growing popularity in the future. One of Rodco's assets is its good agronomic characteristics, which naturally have a great appeal to the wheat grower who must take his chances with fickleness of the weather. Farmers who seed Rodco like it.

For example, the High Plains Journal, Dodge City, Kansas, after harvest last fall printed an interview with Pete Smith, a prominent wheat grower of that section, who praised Rodco qualities and said, "If Rodco has some shortcomings I have not found them. It is a better wheat all-around."

In particular, Mr. Smith cited good yields, a very strong straw, apparent resistance to mosaic and greenbug as well as Hessian fly, plus a wide leaf that makes good fall pasture and protects well against wind erosion. Mr. Smith also praised Rodco because it did not shatter easily and yet was not hard to combine. Rodco is a little later maturing than Wichita, a medium gluten wheat, but about the same as Bison or Ponca, two strong varieties.

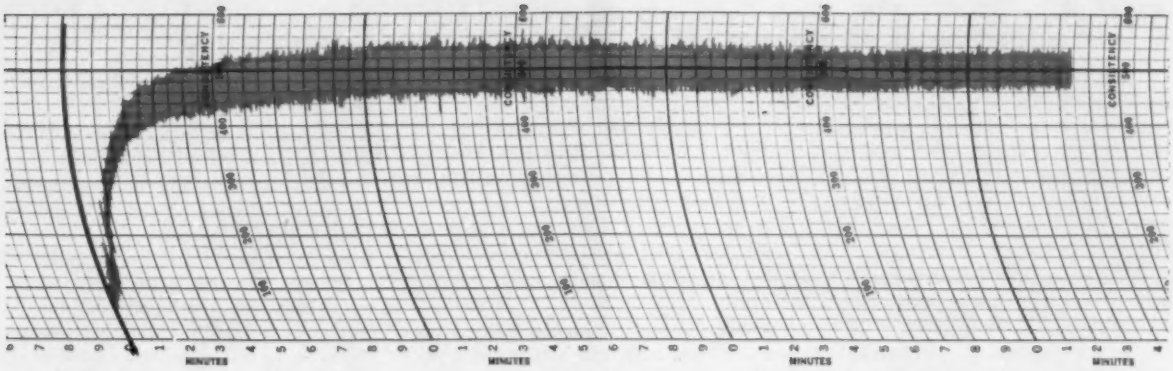
"I believe this is the farmers' wheat we have been looking for," Mr. Smith said.

Valuable Popularity

Such popularity with growers in the long run is more valuable than any price premium in promoting greater acreages. Rodco merits have been spread mostly by word of mouth among farmers. Kansas State University has Rodco in test plots, and in recently published comparisons with other varieties in various stations throughout the state, Rodco has shown up well.

Rodco is now rather widely grown over the state. This year for the first time there is a market supply of the variety. It takes a long time to build volume in a wheat variety. Most of what is grown in the early years must be used for seed.

Although under test since 1950, it



TYPICAL FARINOGRAPH CURVE showing the good mixing strength and tolerance of Rodco, a relatively new variety of hard winter wheat. Introduced in Kansas, the variety has shown a steady growth in popularity among growers.

Spreads Across the Southwest

was not until 1954 that there was enough Rodco seed to distribute throughout central Kansas and northwest to Colby. Since then fields have gradually spread over the state, even into some of the eastern counties. By 1958 about 55,000 acres were harvested. This year the state survey of acreage planted to different varieties estimated a total of about 100,000 acres planted to this variety. Later surveys at harvest time indicated that the earlier estimate of acreage was too low and that the figure was close to 500,000 acres actually harvested this year, which would mean that the production of Rodco in Kansas was in excess of 15,000,000 bu.

In line with climate and soil differences and other environmental factors, protein levels of Rodco will vary from section to section. But the gluten strength has proved outstanding wherever planted, regardless of protein level. This ability to do well over a wide area is a great asset and is one of the things that made the old hard red Turkey wheat so popular years ago.

Cross-Bred Wheat

Rodco is a cross-bred wheat, fostered by cereal chemists of the Rodney Milling Co., and the company which put the initial impetus and promotion behind the variety. Recognizing the importance of the baking properties inherent in the wheat, a premium was paid to the grower, based on comparative market values. This helped get the variety started, but after that point was passed, farmer satisfaction with performance of the wheat made progress easier. In the communities where Rodco has been introduced, word of mouth advertising among growers themselves has been the principal factor in its spread.

Grower approval of the field performance of any wheat is always the prime factor in dissemination of a wheat variety. Except in occasional and unusual circumstances, price premiums generally reach the grower only to the extent that a particular wheat buying station develops a reputation for having wheat in that locality that is especially desirable.

The fact that Rodco has comparative merit from the farmers' point of view is the reason for the optimism about the future progress of this wheat. If as much as 15% of the Kansas acreage were planted in Rodco, it would be a great supplement to other strong varieties in attaining the goal of half of Kansas acreage in strong gluten wheats that the Kansas Wheat Improvement Assn. is seeking. «

Each year pushes forward the never-ending search for a new variety, a better wheat to reflect man's pride in his handiwork and to improve the bread at his table. So intensive is the search, so vital the results, that it attracts the interest and efforts of all those involved, from the grower on through the flour miller and the baker.

GRAIN EXCHANGE operations at San Francisco for 1960-61 will be the responsibility of these officers now elected to their respective positions. Left to right they are Edmund W. Huebner, secretary-manager; Ernest L. Silverfield, Continental Grain Co., president; Eugene R. Warren, Warren Grain Co.; Latham Allen, Allen Co., and Howard Boone, Cargill, Inc.; all members of the board of directors. Not present is E. H. Durr, Golden Eagle Milling Co., Petaluma, vice president.

Pillsbury's Fiscal Year Sales Hit Record Level

Sales of the Pillsbury Co. for the fiscal year ended May 31 climbed to a record level but earnings dipped due to some adverse economic conditions, rounding out a financial statement closely in keeping with sales and earnings trends reported by many major firms.

For Pillsbury, however, earnings still held to a figure that is second highest in company history.

Plant expansion, modernization, new products and heavy emphasis on research and technology ring loudly through the entire report to stockholders, Pillsbury's 91st, issued over the names of Paul S. Gerot, president, and Philip W. Pillsbury, board chairman.

Sales for the fiscal year amounted to $373,818,795, up $8,479,653 over the preceding year.

Net earnings were $6,541,094, down $1,371,951 from the previous year. Per share earnings equalled $3.04 compared with $3.80 in the previous year.

To emphasize the energetic manner in which the company is pushing forward, the report describes the projects for which it invested $9,415,000 in capital expenditures—new plants and the modernization and expansion of existing ones; developments in research and technological areas which will support product growth in new and existing fields; new products for new and existing markets; entry into the non-food consumer field with the Tidy House line of cleaning products, and development of business in foreign countries.

The reduction in earnings was brought on by adverse economic conditions in the formula feed, soy processing and commodity merchandising industries; higher marketing expenditures for consumer products; lower margins and by-product recoveries from the sale of bakery flour, and strikes at two major plants.

But on the brighter side, Pillsbury's most vital expansion in fiscal 1960 was completion of a refrigerated products plant in New Albany, Ind., where it adjoins what the company considers the world's largest and most modern refrigerated dough research laboratories.

As part of a long range plan to serve markets from the most ideal locations, Pillsbury has in progress its new flour mill in Los Angeles to handle its primary product in that growing area of the country. Along the same lines, the company has exercised its option to obtain a 40-acre site for a new consumer mix plant in Bridgeton, Mo., near St. Louis.

During the year four administrative and organizational steps were taken to strengthen Pillsbury's research and development activities:

- Salary and title structures were developed which will open opportunities for scientists doing pure research work.
- Recruitment of highly trained personnel was instituted and is being pursued.
- Refinements were made in the project concept of work organization to bring necessary skills to bear on research projects.
- Appropriations were increased for research and development work.

The firm's growing line of potato products was augmented in June of 1960 with purchase of a potato processing plant in Grand Forks, N.D.

In the area of its overseas operations, Pillsbury developed flour licensing and technical assistance agreements in El Salvador and Guatemala, a formula feed operation in Guatemala, and a partnership to build a flour mill in Ghana. «

The Pillsbury Co. and Subsidiaries

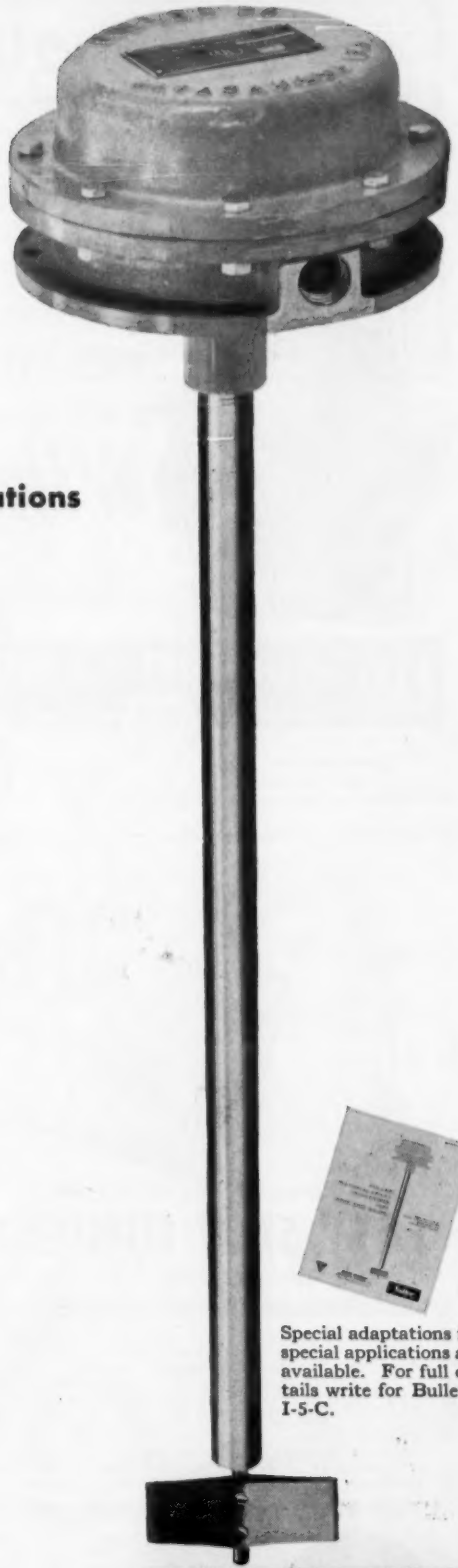
Comparative Consolidated Statement of Financial Position

	May 31, 1960	May 31, 1959
CURRENT ASSETS:		
Cash	$ 9,935,964	$ 6,977,173
Receivables	33,304,617	33,102,316
Inventories	36,983,447	40,394,666
Advances on purchases	4,187,117	1,108,110
Prepaid expenses	2,051,548	1,220,380
Total current assets	$ 86,462,693	$ 82,802,645
CURRENT LIABILITIES:		
Notes payable	$ 8,066,163	$ 1,255,460
Trade accounts payable	12,631,589	11,390,857
Accrued liabilities and miscellaneous accounts payable	7,113,568	7,457,131
Dividends payable	775,503	777,440
Current portion of long-term debt	30,000	69,160
Taxes on income	5,038,594	7,523,679
Total current liabilities	$ 33,655,417	$ 28,473,735
NET CURRENT ASSETS (working capital)	$ 52,807,276	$ 54,328,910
PROPERTY, PLANT, AND EQUIPMENT	49,717,735	45,464,078
MISCELLANEOUS ASSETS, NET	582,753	1,105,401
INTANGIBLES	1	1
	$103,107,765	$100,898,390
DEDUCT—Long-term debt, non-current portion	18,740,000	19,570,434
NET ASSETS	$ 84,367,765	$ 81,327,956
OWNERSHIP:		
$4 cumulative preferred stock	$ 3,798,600	$ 4,562,200
Common stock	34,447,432	26,147,524
Additional paid-in capital	.....	7,939,433
Accumulated earnings, retained and used in the business	46,121,733	42,678,799
	$ 84,367,765	$ 81,327,956

Comparative Consolidated Statement of Earnings

	—Year Ended May 31,— 1960	1959
INCOME:		
Net sales of products and services	$373,818,795	$365,339,142
Interest and other miscellaneous income	1,606,185	709,293
	$375,424,980	$366,048,435
COSTS AND EXPENSES:		
Cost of products sold	$297,152,021	$288,981,915
Selling, general, and administrative expenses	61,483,296	57,080,093
Interest and debt expense	2,124,362	1,365,879
Miscellaneous deductions	868,407	887,503
	$361,628,886	$348,315,390
EARNINGS BEFORE TAXES ON INCOME	$ 13,796,094	$ 17,733,045
TAXES ON INCOME	7,255,000	9,820,000
NET EARNINGS FOR THE YEAR	$ 6,541,094	$ 7,913,045

FULLER material-level indicators for bins and silos



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The Fuller Material-Level Indicator is a reliable high-level/low-level indicator that provides automatic control when a desired maximum or minimum level of material is reached.

The Material-Level Indicator automatically shows the level of pulverized, fine, crushed and granular materials—in a bin or silo—and readily "takes command" of such equipment as feeders, valves, elevators, and conveyors by starting or stopping equipment drive motors when a predetermined material level is reached.

Engineered and built for sustained operation over long periods of time, the sturdy Material-Level Indicator always registers true indication, regardless of momentary surges of bin material or the settling action of aerated, pulverized material.

Fuller Material-Level Indicator's Operation

A sensing paddle, located at the desired material level, is constantly rotated by a shaded pole induction motor located in the casing outside the bin or container. The motor and its reduction gears are mounted on an extension of the paddle shaft. Whenever material restrains the paddle from turning, the motor and its mounting revolve about the drive shaft, actuating two switches mounted on the base of the indicator.

When material falls away from the paddle, an adjustable tension spring returns the motor and its frame to the initial position, releasing the switches and causing the motor to turn the paddle again.

For high-level indication or control, the motor runs continuously until paddle rotation is impeded by the rising level of material.

For low-level indication or control, the paddle is restrained by the material and in turn restrains switches until the material falls below the paddle. When this happens, an adjustable tension spring returns the motor assembly to the starting position, releasing the switches and again starting paddle rotation.

Model SG-4 is designed for general purpose applications; SG-4 is UL approved for hazardous dust locations, Class I, Group D and Class II, Groups E, F, G.

Special adaptations for special applications are available. For full details write for Bulletin I-5-C.

2836
I-9

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Bullish or Bearish?

Market Analysts Scratch Their Heads as Supplies Of Wheat Climb Steadily

By F. C. BISSON
Special Correspondent

It's a bewildering period for market analysts. They are sitting up, now that the new crop is under way, scratching their heads, sharpening their pencils, viewing the supplies of wheat in storage and coming to market, trying vainly to forecast when conditions will be bearish and when they will be bullish in the months ahead.

F. C. Bisson

No. small feat of skill, be assured. The prime factor, of course, is admission by the U.S. Department of Agriculture that it—and it alone— either owns outright or has "under pawn" 95% of the wheat carryover.

In a normal year (admittedly hard to define considering the government's methods of taking more wheat in the front door than it kicks out through the back) an accumulation of wheat such as that represented by the July 1 carryover of more than 1.3 billion bushels would be tagged definitely bearish. This would be true particularly if circumstances were the same as we find them this year, with a new wheat harvest almost the size of the carryovér, or a grand total of more than 2.5 billion bushels.

The qualifying factor, of course, is that USDA admission to controlling more than 95% of the carryover.

Selling Factor Examined

Naturally, whether or not there is going to be any selling pressure, is directly dependent upon who holds title to all this grain.

Let's go back some years.

A generation or more ago the wheat market generally weakened to some degree as farmers hauled their grain to the nearest elevator as soon as it had been threshed. They sold it, paid off the grocer, the hardware man or the harness maker (from whom they had been buying "on tick" for six months).

It's vastly different now.

The government loans the grower more money than the wheat is worth in the first place on one of those deals to which only the government possibly could be a party—sort of a "heads I win, tails you lose" transaction from the farmer's standpoint. By simply defaulting on the loan and turning the collateral over to the government agency, repayment of the principal or interest becomes completely unnecessary because of the non-recourse aspect of the transaction.

Chicago Stocks Building

Stocks of wheat at Chicago, with no attention given to ownership by private firms or individuals on the one hand or by the government on the other, are beginning to build up rather materially. The Chicago Board of Trade and the Commodity Exchange Authority release statistics each week end.

The total wheat in store at Chicago on the Friday nearest to July 1 was at a very low point, only 591,000 bu. It was, of course, whittled down from about three times

that amount a month earlier.

By Aug. 1 the trend was well reversed and the total showed 13,184,000 bu., an increase of about 12.5 million bushels.

In a general way, the historical price trend has been associated rather closely with the extent to which the wheat stock total accumulates at this Chicago terminal.

It is interesting to note that the 591,000 bu. in store at Chicago July 1 was the smallest for that date since the figure of 295,000 bu. back in 1948. These two years, 1960 and 1948, contrasted sharply with July 1, 1954, when Chicago elevators had more than 9 million bushels of wheat on hand. It is a marked contrast, too, with July 1, 1955, when elevators had in store 6 million bushels.

With the mountainous carryover on hand July 1 of this year, and with a new crop in view exceeded only once before in U.S. agricultural history, it will be most interesting to note how much wheat is added by Sept. 1 to the 13 million bushels on hand Aug. 5.

Space Shortages

Shortages of warehouse and elevator space always have had a depressing price impact on grains, and tightening of these facilities in the Southwest already has tended to check advances in the wheat market.

On the other hand, the chairman of the House Agricultural Committee recently indicated he would press for emergency legislation which, if passed, would replace the present loan levels with much higher ones such as were effective back in 1956.

Whether or not this is to be credited to campaign oratory remains to be seen. But if it should occur, it could bring about a situation still more artificial than the one currently in existence, at the same time undermining still more sound, logical marketing procedures. «

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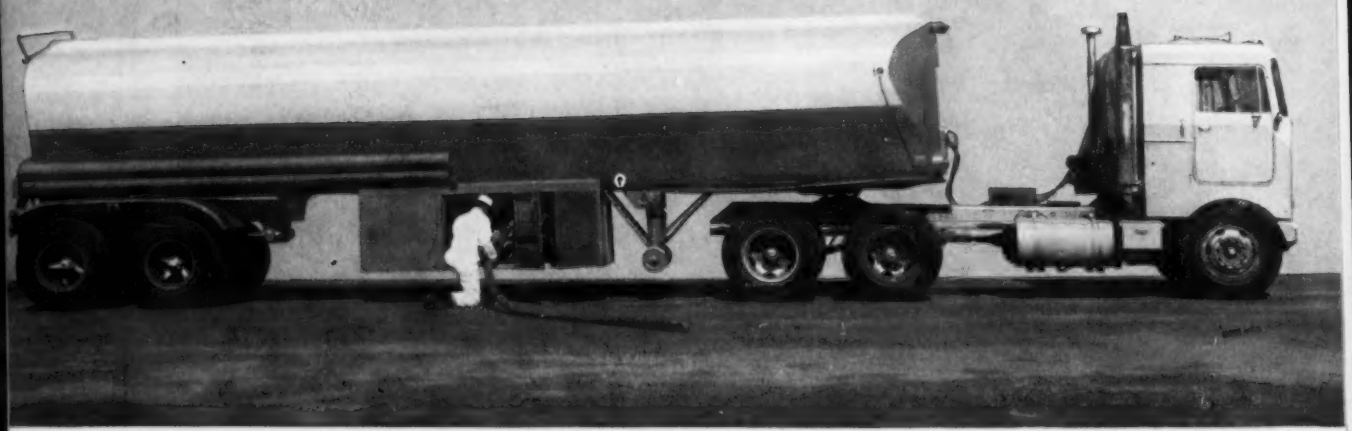

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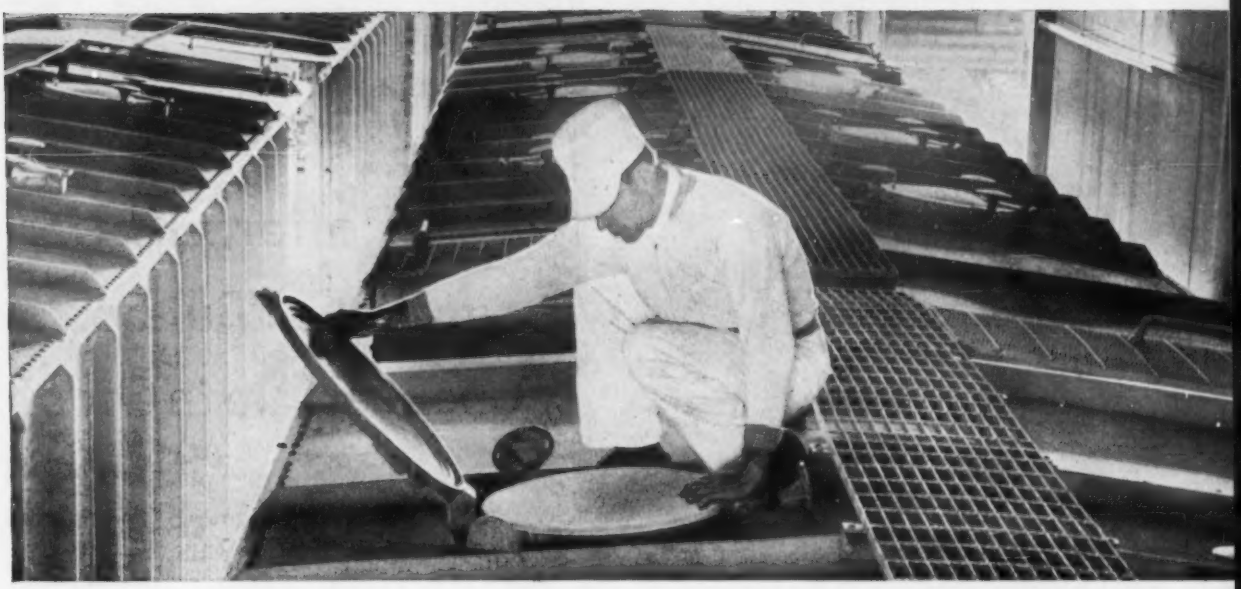

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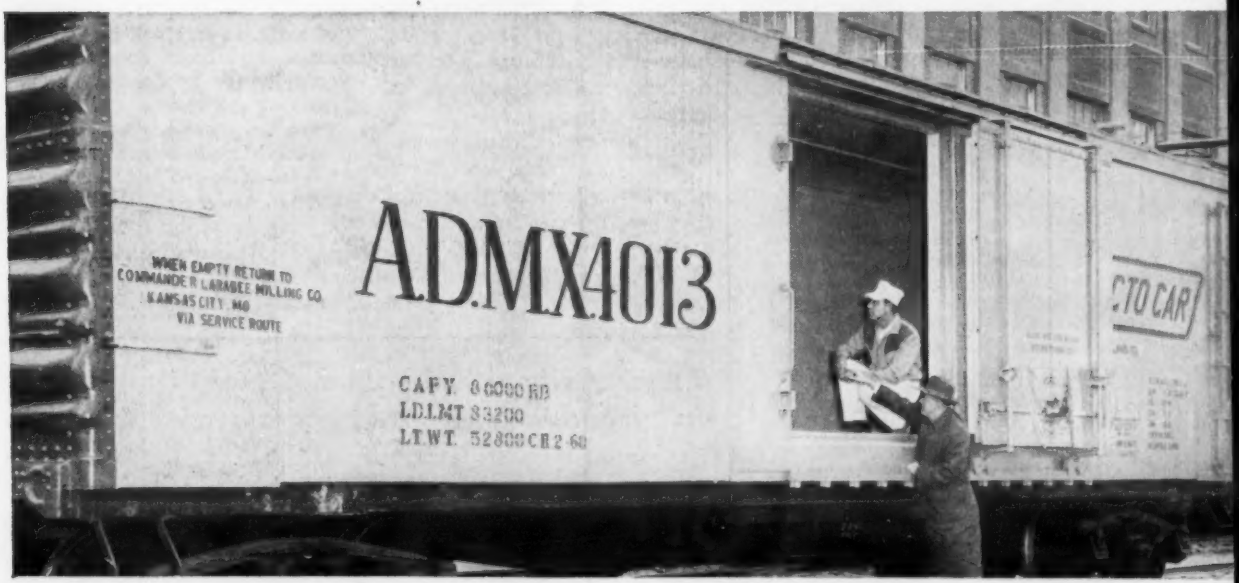

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COMMANDER LARABEE DIVISION

MINNEAPOLIS • KANSAS CITY

A Milling Technology Feature

The Rollermill: It's Functional, But Some Changes Are in Order

A Broad Road for Improvement Lies Ahead

By DON A. FRANKLIN

The literature of flour milling is replete with references to the historic replacement of millstones with rolls about a century ago — but whether the student learns of the European or American system depends upon which side of the Atlantic his material was written.

Don A. Franklin

Books and papers tell of the development of rollermills from crude, paired rollers and simple feeding devices of the pioneering stage to the levered, hydraulically operated mechanisms so widely used today.

As the European writers have the advantage of numbers, this leaves a large group of millers probably unaware that the diagonal roll ever has had a really serious challenger for installation in flour mills anywhere in the world.

Of the different makes of diagonal rolls available, however, many feel that all are about equal in over-all performance and construction, despite the fact that each manufacturer is able to offer some features most attractive alone for his machine.

Again, there are few people who have written anything on their thoughts of the future development of rollermills, although some development, of course, is generally considered inevitable and the views that have been recorded so far are somewhat diverse. It is, however, fairly well agreed that the periphery speed of rollers will most certainly be raised as various mechanical advances make this feasible.

There is no such agreement on size of the grinding rolls, one line of thought having been developed from the idea of very small diameter rolls which would allow more grinding in a given area of floor space. Not long ago, a contributor to "Milling," the British milling paper published in Liverpool, expressed an interest in much larger diameter rolls of heavy construction which would allow more work to be done in a single passage of stock. It may well be that both of these ideas could be developed successfully for application in different parts of the system, and there is always the possibility of developing a machine in which one very large roll has several smaller "satellite" rolls working against it in the hope of making the best of both worlds!

Recently we also have what seems to be the beginning of a trend to supersede the rollermill for grinding

The few who have expressed their ideas on the future of rollermills have been somewhat diverse in their thinking. In this article, the first of a two-part series by Mr. Franklin written especially for THE Northwestern MILLER, he sets out not only the historical background but also some of his views on the future. He is head miller for Robin Hood Flour Mills, Ltd., the youngest in the firm's history, having joined as a trainee in 1952 after moving over from England, where he served his apprenticeship with Whitworth Bros., Ltd.

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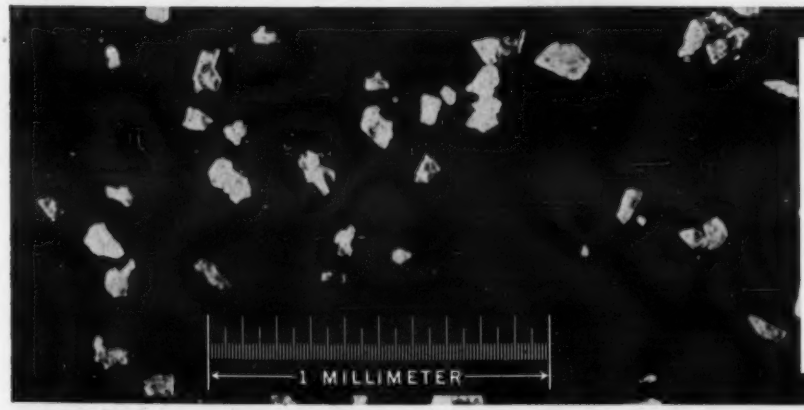

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CUMULATIVE PERCENT RETAINED BY

42 Mesh	Trace
100 Mesh	.5%
170 Mesh	20.0%
200 Mesh	35.0%
325 Mesh	70.0%
400 Mesh	80.0%

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TYPICAL SCREEN ANALYSIS
CUMULATIVE PERCENT RETAINED BY

42 Mesh	Trace
100 Mesh	.5%
170 Mesh	20.0%
200 Mesh	35.0%
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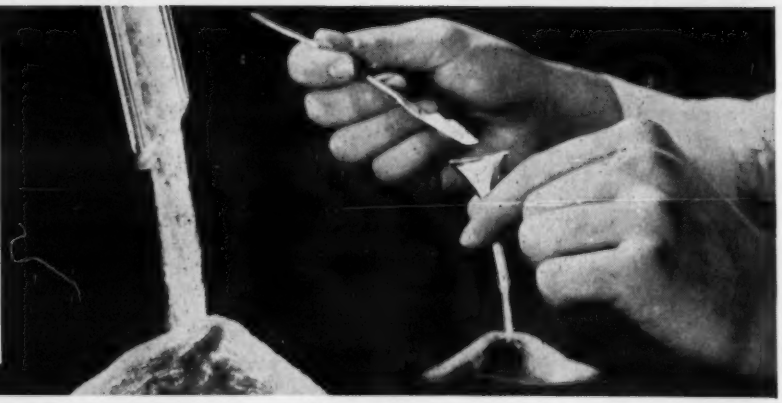

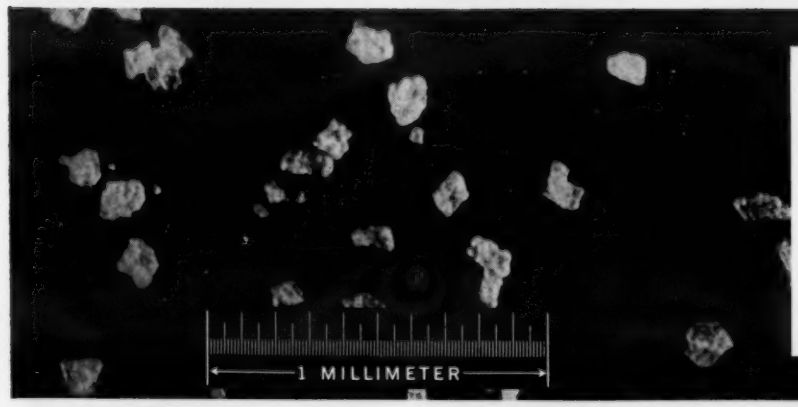

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TYPICAL SCREEN ANALYSIS
CUMULATIVE PERCENT RETAINED BY

80 Mesh	Trace
100 Mesh	1.5%
170 Mesh	80.5%
200 Mesh	91.0%
325 Mesh	98.5%

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middlings into flour by high speed centrifugal machines, which are claimed to give superior results, in a smaller floor space and with less complexity of operation than rollermills. At present the power consumed by these machines may be against their general profitable use, but this aspect of present day economics could reasonably be expected to change at some time in the future. The fact that these machines are being successfully used, however, illustrates that the thought of any method of reducing middlings to flour, other than the use of a feather light touch on successive pairs of smooth rolls, is not necessarily doomed to failure.

Again, in recent times, various wheat slicing and germ extracting machines have been developed in Hungary which claim to make obsolete some portions of the break roll systems; moreover, these systems are said to be in successful commercial operation at this moment.

Be all of this as it may, it is likely that rollermills will be with us for a good many years to come, and I hope it will be of general interest to review the main operational features of rollermills now available and to discuss some modifications to present day practices that might appeal to at least one miller.

MACHINE LAYOUT

Since the earliest days of rollermills, many and various layouts have been constructed. We have records in flour mills of single and double pairs of rolls mounted in the same frame at the same level; manufacturers today still make various designs of superimposed rolls, although they now seem to be mostly used in other industries. At present large flour milling operators do not seem much interested in machines which combine successive reductions. But, since the space saving economies to be effected by mounting two pairs of rolls in one machine do not seem to have any serious shortcomings in practice, it looks as though essentials of the present four-roller mill layout are unlikely to experience major changes in the foreseeable future. One possible exception to this line of thought, however, may be some form of miniature rollermill such as the one now to be discussed.

From the various reference works commonly available it seems that some of the earlier rollermills used in Europe were of horizontal construction; but from these beginnings there seems to have been a tendency to construct vertical rolls: as a matter of fact, there are several plants where the old style vertical rolls of 1880 vintage were still operating up to a few years ago, and it is likely some of these same machines are running to this day.

Vertical Rolls

The vertically designed rollermill, however, was endowed with one major disadvantage which has led to its disappearance from the market. No one has ever come along with a really satisfactory way of introducing the feed into the nip of the rolls. It seems inherent with this layout that the feed must be visibly spread some height above the upper roll, the stock then disappearing from sight to be chuted onto the lower roll by a stationary baffle. What actually happens to the stock from the feed mechanism before it reappears from the grinding rolls must forever remain a mystery to the operator; this is not only a direct disadvantage to the miller, but in the infestation-conscious modern mill it poses a problem in hygiene very hard to overcome.

The sum total of the disadvantages of this layout are extremely well dealt with in "The Development of the Modern British Rollermill," however,* and since nothing seems to have changed in this respect since that work was written, it would serve little purpose to elaborate further here.

There are two other styles of the four-roller mill which have found much popularity, these being the diagonal and horizontal, and since the writer has had about equal experience with each of these, the following is a list of what are considered to be the major operating pros and cons:

Diagonal Rolls

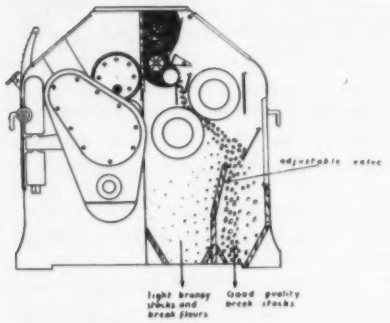
The diagonal roll is always made with the fast rolls on the outside of the frame. This is necessary for a number of reasons, the most important being that the lower roll must be used to convey the stock into the grinding area. This layout, however, offers several side benefits: the upper roll must of course be moved first in roll changing, and as the fast roll is invariably subjected to more wear than the other, it is quite convenient to change one roll only. It is also apparent that the bearings which are inclined to run the warmest are the most easily accessible, and this factor is, of course, used to further advantage in some water cooling arrangements where the fast roll only is actually cooled directly by the water. Access to the fast roll brush or scraper is very convenient, and this feature has been keenly appreciated for many years.

It was the diagonal layout of rolls

*A publication of the British National Joint Industrial Council for the Flour Milling Industry.

that allowed introduction of the Alphega system which was at one time very popular in England and is still in use in some mills. The principle involved here was to separate the roll hopper into two parts lengthwise by an adjustable valve installed in each of the first three break passages. It was then possible to separate the slow falling light flour and branny stocks from the faster moving, good quality stocks (see diagram 1). These light stocks then

Diagram 1
Alphega System



enjoyed the luxury of a private grading system without being allowed to contaminate the main run.

A drawback that results from this same action, however, is the fact that a baffle is necessary to prevent stock from being thrown out of the inspection door, which to some extent nullifies the ease of sampling and inspection so often claimed.

The diagonal layout, however, is not without other disadvantages.

It is very difficult to see the slow roll at all when it is operating with scrapers, baffles and guards in position. During shutdowns, it is still difficult to examine the surface of the slow roll for wear. When in operation, it is, of course, easy to see that feed is falling in the desired thin, even curtain towards the nip of the rolls. But in actual practice it is very difficult to inspect the nip and it is hard to otherwise detect small blockages which can build up between the two guards usually provided. The phenomenon of "floating stock" is impossible to detect, and any observations or work done in this area becomes increasingly dangerous when full visibility cannot be maintained.

It also has been found in the past that two feeder rolls are most desirable, one a slow speed roll to spread the stock in a suitably thin curtain, and the other, working below this at a faster speed, throws the stock forward into the roll nip. This subject, however, is covered in more detail here.

The horizontal rolls produced in

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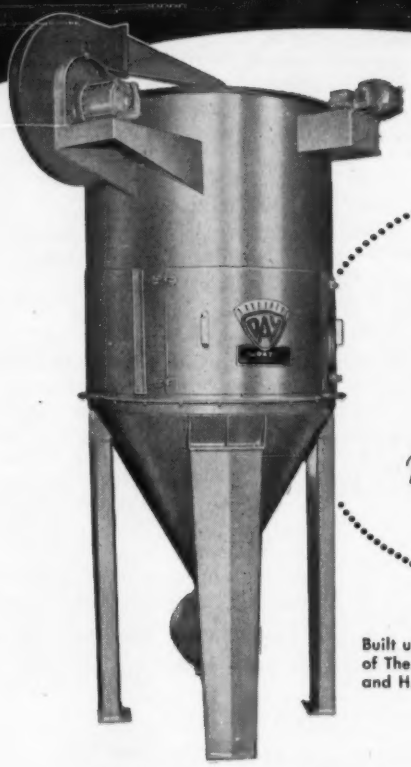

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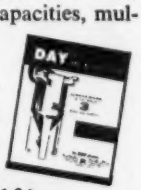

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Rollermills Examined (continued)

the U.S. have differed a good deal from their European counterparts in drive and differential arrangements. The initial concept guiding the direction of American roll development, seems to have been to drive both the fast and slow rolls directly from the same lineshaft. It is, of course, possible to do this on a four-roller mill with only two belts if the fast and slow rolls alternate in the frame, thus in one half stand the fast roll is in front, whilst in the other it must move to the back. (See diagrams 2, 3, and 4.)

At first glance it may seem that with a horizontal layout, either roll could be removed independently for changing, but in practice it is found that owing to the position of the feeder arrangement, the outside roll must be removed first and the other roll moved into the front position before it can be lifted. This means of course that the fast roll cannot be changed without disturbing the slow roll in one half of the frame. But this difficulty certainly could be overcome by various alternative drive arrangements. It seems that use of an Alphega system would not be possible with a horizontal stand where the stock is all thrown straight downwards from the rolls, but it probably would not be too difficult to arrange for the roll exhaust inlet to serve double duty as an "Effective"* purifier if this particular result were to be desired. With modern mill flows, however, where extra complications seem to be avoided, this type of subsidiary system no longer seems to be popular and possibly the modern break sifters with large sifting surface and their ability to make more separations than before, will cause interest in this field to disappear.

Against these drawbacks, however, the horizontal roll does possess some very definite advantages.

The layout of bearings on a horizontal roll is comparatively simple. Generally it is possible to construct the roll body above the rollers of very light material and the parts that must be removed for roll changing usually can be taken away in one or two portions without disturbing the bearings at all. Perhaps this fact can lead more simply to an extremely sturdy set-up, but at any rate it seems almost certain that any type of feeder arrangement that will satisfactorily spread the stock to be ground will be quite adequate as the actual entry of the stock into the grinding gap can easily be controlled by visible baffles against which the stock need only glance during its free fall. Again this item will be dealt with here at greater length.

Both of the rolls in this layout can be inspected easily when the rolls are stopped, and it certainly is the only practical layout which offers a view of the stock actually entering the roll nip. This last usually means that all of the necessary guards and baffles can be safely removed, or adjusted while the rolls are in operation.

With a horizontal roll layout, if the bottom roll of a diagonal mill is considered raised instead of the top roll lowered to effect the transformation, actual examination of stock beneath the rolls is found to be just about equal to the diagonal set-up, and since the stock is thrown straight down, it may even be facilitated.

It has often been supposed that a difficulty experienced in the operation of horizontal rolls would be access to the scrapers or brushes. In actual practice, very little additional trouble is experienced from this source and, once again, if the rolls are mounted at the most convenient operator height above the floor, a great deal of difference to this can be made.

Another complaint levelled against

*The "Effective" purifier was a machine designed to make 3 or more separations from stocks by the use of air only.

Diagram 2
fast roll drive

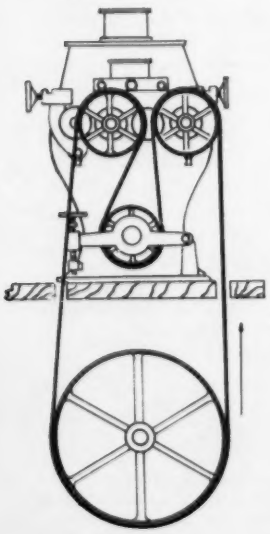


Diagram 3
slow roll drive

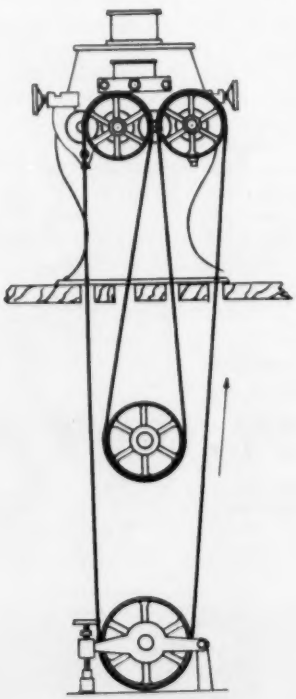
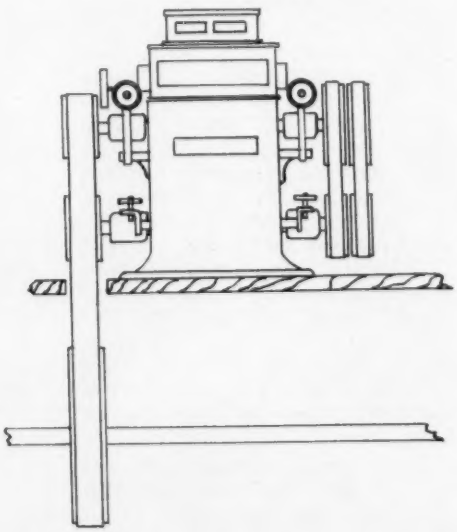


Diagram 4
counter shaft drive



The Vital Story of MILLED WHITE RICE

Enriched with Vitamins and Iron for Better Health

by Science Writer

A second "Battle of Bataan" in the Philippines has proven beyond all doubt the value of vitamin enrichment to consumers of white rice.

The famous Bataan experiment in 1948-1950 proved conclusively that whole populations can benefit from enrichment of white rice with vitamins and iron, that disease and death caused by dietary deficiencies can be overcome, that enrichment is a key to better health among infants, children and adults.

What Happened at the Second "Battle of Bataan"

Before the start of the Bataan trial, these facts were evident:

- Polished white rice is the principal food of millions throughout the world. Good food though it is, it lacks several of the key nutrients occurring in the brown rice from which it is milled, and beriberi is often common where white rice is the main food.
- In the Philippines, beriberi was common and mortality from it high.
- Beriberi is caused by insufficient vitamin B_1 in the diet. It yields when vitamin B_1 is given to its victims. It does not occur when human beings receive enough of this vitamin in their diet.
- To prevent beriberi where white rice is the the main food, vitamin B_1 must be added to the diet, either by itself or in food such as rice.

- For centuries it has been universal practice to rinse rice before cooking, hence vitamin B_1 (and any other water-soluble nutrient factor) should be added in such a way that it will not dissolve out.
- Through a process developed in the laboratories of Hoffmann-La Roche, it is possible to enrich white rice with water-soluble vitamins and iron so they will not wash off during this rinsing prior to cooking.

With these facts known, the second "Battle of Bataan" began. Through the cooperation of Philippine public agencies, the Williams-Waterman Fund, the USPHS, and Hoffmann-La Roche a controlled experiment was set up in the province of Bataan. More than 12,000 medical examinations were made, before the enrichment of rice began. Nearly 13% of those examined had beriberi.

Enriched white rice was then put into commerce in the experimental area, but not in the control area.

What happened? *Within two years beriberi was practically wiped out in the experimental zone!* . . . beriberi mortality dropped almost to zero . . . almost 90% who had symptoms of the disease before enrichment's start were free from signs of the disease or were greatly improved . . . thousands of people were helped to better health. News of the success of enrichment reached people in the control area and caused them to demand that their rice be enriched, too.

Other Countries Follow Suit

Word of the excellent results of the Bataan experiment fanned out throughout the world. The largest rice miller in Thailand marketed enriched white rice with success in 1951. In that year, also, the Puerto Rican government enacted legislation requiring that all white rice sold there be enriched, beginning early in 1952. Since then, enriched rice has been made available to the public in Cuba, Venezuela, Colombia, The Dominican Republic, Taiwan (Formosa), Singapore, and Australia.

South Carolina First To Adopt Enrichment

South Carolina, a state having high per-capita white rice consumption, requires by law that all white rice sold there be enriched with vitamin B_1, niacin, and iron, with vitamin B_2 to be included at a later date. This state has required enrichment of white flour and corn meal since 1942 and 1943 respectively.

Federal Standards of Identity Now In Force

The U. S. Food & Drug Administration established the following Standards of Identity for enriched rice which must contain at least 85% of the minimum quantities, shown below, after a rinsing test. If the method of enrichment does not permit this rinsing requirement to be met, consumer size packages must bear the statement: "Do not rinse before, or drain after, cooking."

	Milligrams per pound	
Vitamin	Min.	Max.
Thiamine	2.0	4.0
Riboflavin*	1.2	2.4
Niacin	16.0	32.0
Iron	13.0	26.0

*Optional pending further study

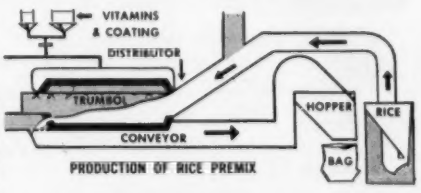
U. S. Federal Specification N-R 351 C requires the same content as the minimum standards shown above.

Popular brands of 'quick cooking' rice are now being enriched with all of the required vitamins.

How Is White Rice Enriched?

The enriching method in widest use throughout the world employs a method developed in the laboratories of Hoffmann-La Roche Inc., pioneers in the research and production of vitamins.

The Roche method impregnates rice grains with thiamine, niacin, (riboflavin, if desired), and iron and adds a final, outer coating of edible material to protect the vitamins against deterioration and preliminary washing and rinsing. For economy large amounts of vitamins are applied to small amounts of rice to make a "premix". One pound of the "premix" is then mixed with a larger quantity (usually 199 lbs.) of ordinary milled white rice at the mill.



PRODUCTION OF RICE PREMIX

What of the Future?

The trend to nutritionally-improved foods for better health is definite. The United States, a world-leader in the enrichment of white flour, white bread, corn meal and grits, farina, pastina, macaroni products, and breakfast cereals is now recognizing the need to enrich milled white rice. *When good foods are made better, everyone benefits.*

This article is part of a series on those processed cereals that are enriched for better nutrition. An illustrated brochure containing all of these Vital Stories is available without charge. Send your request to: Department of Education, Fine Chemicals Division, Hoffmann-La Roche Inc., Nutley 10, N. J.

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the horizontal roll is that the stand must necessarily be wider. With close study, however, it is found that although an arrangement of 10 in. rolls set at 45° could save about .8 in. of space over the horizontal arrangement, the space occupied by the adjusting mechanism and exhaust, plus the layout of the feeder rolls, generally brings the over-all width from a minimum theoretical 32 in. to something over 4 ft. The changes in construction that become possible by adopting the horizontal layout might make it feasible to build the horizontal roll in substantially the same over-all width, as this and a reduction in the size of roll chills from 10 to 9 in. would make this accomplishment a virtual certainty.

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PHYSICAL SIZE OF FLOUR MILL ROLLS

Up to a certain point, it seems likely that the work done by a pair of rolls will vary directly with their periphery speed, the length of roller contact, and not so directly with diameter of the rolls doing the grinding. This last factor is particularly hard to evaluate and will vary with the type of stock even more than the first two.

Diameters

Rolls of about 18 in. across have been in use for cereal flaking for many years, and it has been suggested that such rolls might well be used for grinding the larger clean middlings from the head of the mill into flour. It is true that there seems to be a larger working area in the arc of contact of two such rolls and possibly various differentials and different roll surfaces could overcome the flaking action that would otherwise be a drawback.

No doubt, also, these heavier rolls would be subject to less deflection than rolls of smaller diameter, and it would be possible to use a longer roll contact in a single frame. The drawbacks of the increased size, however, include the very heavy nature of the individual rollers, which would complicate the frequent roll changes that are especially necessary on this type of operation. Also, it is obvious that these roll stands would be a good deal wider than the rolls now popular, and there is no reliable indication that they could operate at higher periphery speeds or loadings per lineal inch of contact than rolls now in use.

In his book "Flour Milling Processes," J. H. Scott describes a rollermill which he feels could be developed where the rolls are only 3 in. in diameter. Such small rolls would of course be restricted in length by the problem of deflection under pressure, but by mounting the rolls across the frame it can be seen that it is possible to multiply the length of roll contact available in a given amount of mill floor space several times over.

It also seems probable that this size of roller will be inclined to flake tail end stocks considerably less than conventional rolls. Possibly the subsequent sifting of such stocks would be substantially improved.

If a 3-in. roll is operated at the same periphery speed as the conventional roll, however, the 15 in. rollers will require bearings at least one half as sturdy as those used on a maximum efficiency 30 in. rollermill: But when a 30 or 40 in. roll is examined it can soon be seen that the types of bearings presently used would just not conform to the space available. Plas-

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tic sleeve bearings or roller bearings probably could be developed to fill the gap, but the self aligning features so far considered necessary on milling rolls would be hard to tuck into the restricted space.

The problem of driving a whole train of rolls of these dimensions is perhaps the most difficult of all. The strength required in the small driving gears may be hard to design, and the fact that the roll adjustments should move through the same distance as on conventional rolls will require some real ingenuity. The development of the new style plastic transmission belting, the smaller, high-speed Vee belt and Gates type drives, may provide a solution. But at the moment it looks like a very complicated machine, and experience seems to show that complications are to be avoided if a maximum amount of grinding is to be accomplished between two rollers.

The diameter of most rolls now used is, in fact, either 9 or 10 in. There may be indications that 9 in. rolls are preferable on certain break and reduction passages. But both of these sizes seem very efficient and more definite improvements will be required if other sizes are to become really successful.

Length of Rolls

The most necessary attribute of milling rolls is that they should be able to grind without major surface distortions. It would be possible to construct elaborate machinery to correct for distortion, as is done in the case of calender rolls used in the production of paper.

In this case, of course, it is necessary to employ rolls up to 264 in. in length and, to keep roll surfaces satisfactorily p a r a l l e l, the rolls are equipped with a series of compressed air jets along their entire length. Thus, when a high spot develops, the appropriate area can be cooled down to shape. It is reported also as a common practice to use a piece of wool felt pressed against the surface of the roll to effect the opposite reaction.

The grinders of flour milling stocks, however, are not faced with the absolute need for long rolls, and it seems unlikely adoption of techniques of this kind would effect economies in mill construction or operation.

Water cooling has been in use for many years and is, of course, an answer to roll surface variations originally caused by temperature changes alone. This by no means takes care of all of the reasons for these changes, however, and is an extra complication and operating expense that many millers would to date rather not have.

In practice, many companies have found that rollers up to 60 in. in length are suitable for the primary breaks, but the closer tolerances necessary for grinding middlings to flour have made the most popular sizes used throughout large mills 10 by 40, 9 by 36, and 9 by 30 in. Where the maximum reduction of middlings to flour is aimed at, there are many millers who would prefer the 9 by 30 roll over all comers. The reasons for this may be associated with the hollow type of roll frequently used in the 10-in. stands in the past, or in a multitude of other factors. But the chief problem seems to be to control contours of the roll surface during its operating life.

It is apparent also that feeding mechanisms for the shorter rolls can be much less elaborate, and if a 9 by 30 roll were to be made available with design features that greatly reduced its over-all length, this might well be found to be a very popular compromise where heavy grinding is thought to be necessary.

DIFFERENTIAL AND DRIVE

The drives and differentials used on rollermills seem to have been developed on entirely different lines on the two different sides of the Atlantic.

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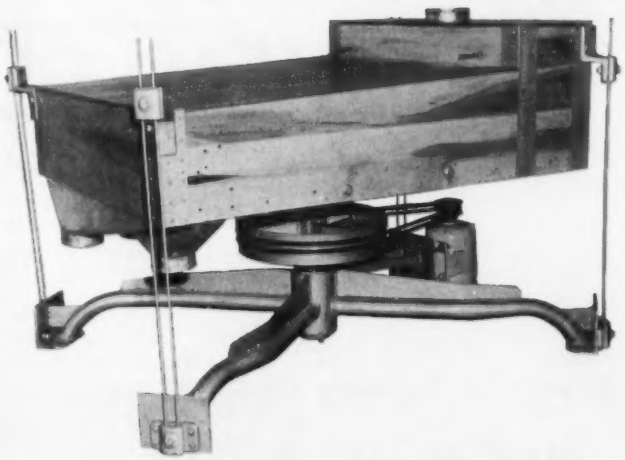

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In Europe from the very earliest times each fast roll was driven by a separate belt and the drive to the slow roll was by direct gearing, whereas in North America the two fast rolls in the frame have been driven by the same flat belt and the two slow rolls by another one or two flat belts. Both of these approaches have been successfully developed during the passing years, but on substantially their original lines. For this reason it would be best perhaps to examine them separately.

European Rollermills

The earliest rolls to become popular in European mills seem to have had two pairs of rolls mounted in one frame to save space, but mechanically both halves were quite separate. Each fast roll was driven by a lineshaft from above or below the rolls and the slow roll was driven, or perhaps it would be more correct to say "braked," through spur or helical gearing from the opposite end of the fast roll. In the beginning spur gears seem to have been used, but owing to undesirable noise, vibration and thrust characteristics, double helical gears rapidly replaced them. The double helical gears were very difficult to machine accurately, however, and helical gears replaced them in their turn on most rollermill designs.

In spite of the end thrust developed in single helical gears, they can be operated quite satisfactorily at fairly high speeds. A case in point is one stand of 10 x 40 rolls of English manufacture which operate very well on second break stocks at 500 rpm. These gears are still relatively noisy, however, and with the close tolerances required to grind middlings into flour they have never been popular at high speeds and large capacities.

One of the main difficulties with gear reductions is that each time the roll setting is changed the teeth adopt a slightly different mesh, and worst of all, when the rolls are reground the gears must either be re-cut or changed for a smaller set. To escape these problems, a type of bevel gear has been used where adjustments for decreasing roll diameter can be made by moving the gears laterally. But again, the problems of vibration have not been solved entirely satisfactorily for very high operating speeds.

These various problems no doubt led the European engineers to develop roller chain drive differentials.

With a roller chain differential, one side of the chain must make contact with the sprocket on the fast roll, while the other side contacts the slow roll sprocket. This means, in fact, that at least one and sometimes two idlers are used on the chain run, and the over-all size of the drive must be increased somewhat: This increase is in a vertical plane, however, and can have no real drawback in practice, whereas the use of extra sprockets enables a chain tightener to be incorporated in the drive which is very necessary on such short centers. This type of drive has found wide acceptance in the North American continent as it will run smoothly at even higher speeds than those now popular.

One of the main criticisms to be levelled against it, however, is that a degree of precision is necessary when assembling the drive after roll changing which is quite time consuming; perhaps modifications in design will overcome this difficulty in the future.

American Design

The earliest American rolls seem to have been developed around two pairs of rolls mounted together in one unit, the entire four-roller mill being driven as one entity. The chills were arranged alternately fast and slow, which offered the advantage of having both fast rolls and both slow rolls turn in the same direction. By using various

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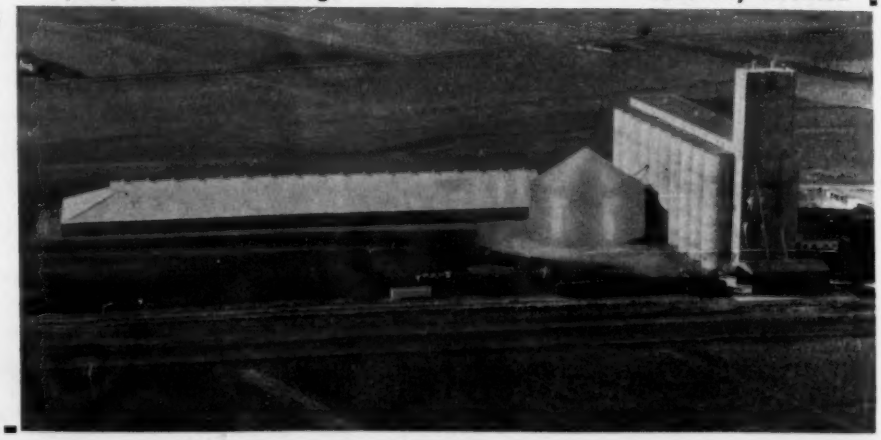

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Here are five reasons why many processors think first of Pfizer BI-CAP when they think of flour enrichment concentrates: **1. EVEN DISPERSION**—The uniform-size particles flow readily and smoothly. **2. EXCELLENT STABILITY**—All forms of BI-CAP are made with thiamine mononitrate for better Vitamin B_1 stability. **3. TWO STRENGTHS**—Single and double strength are available, for feeding to either a fast or slow flour stream. **4. UNIFORM BULK**—BI-CAP is milled to minimum variation. **5. LIGHT COLOR**—BI-CAP is formulated with a new type of riboflavin which gives it a lighter color and overcomes unsightly riboflavin agglomeration.

■ The BI-CAP line includes: BI-CAP Flour Enrichment Mixtures—types AM (single strength) and CM (double strength), BI-CAP Bolted Cornmeal Enrichment, BI-CAP Whole Cornmeal Enrichment, BI-CAP Degerminated Cornmeal Enrichment, and BI-CAP Rice Enrichment. Write for full information about all Pfizer enrichment concentrates.

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Quality Ingredients for the Food Industry for Over a Century

Pfizer

CHAS. PFIZER & CO., INC. CHEMICAL SALES DIVISION, 630 FLUSHING AVE., BROOKLYN 6, N.Y.
Branch Offices: Clifton, N. J.; Chicago, Ill.; San Francisco, Calif.; Vernon, Calif.; Atlanta, Ga.; Dallas, Tex.; Montreal, Canada

American Design (continued)

arrangements of jockey pulleys, all four rolls could be driven with one or two flat belts from a single lineshaft.

Diagram 2 shows the fast roll drive usual to this setup and diagram 3 shows one slow roll arrangement. The layout that has achieved real success, however, is shown in diagram 4. Here the fast roll drive is similar to that in diagram 2, but the idler pulley shaft is extended through a tunnel in the roll base and the other end bears the flat pulley, pulleys or Vee belt sheaves which drive the two slow rolls. The counter shaft thus formed was provided with adjustments at each end to supply tension to the belts and separate adjustments to keep them tracking correctly.

This forms an extremely successful and durable drive, quite silent in operation, and enables employment of high operating speeds and heavy loadings without vibration. The machine can only be driven from below, but all belts form open drives to the lineshaft and all drives are provided with tighteners. The European rolls do not employ belt tighteners and the drives provided by flat leather belts do not transmit the same horsepower as those to the American machines; they also require double the number of pulleys on a lineshaft. It is also apparent that each European roll will have one open drive and one cross drive from the same lineshaft. Although the cross drive gives a better arc of contact on the pulleys, the face of the belt rubs together at the crossing point, and this treatment is not considered satisfactory for every type of belting.

A good deal of success has also been attained in America by various types of "battery" driven rolls. In this sort of arrangement, a group of four-roller mills is mounted on a heavy steel base as one unit and all of the rollers are driven together from one or both ends through various arrangements of couplings and chains. The drives to these batteries can be from two pulleys and a lineshaft, or from one or two motors at the end of the line.

If coupled with a pneumatic system lifting stock through the rolls, this layout would enable the rolls to be placed on the ground floor and could do away with the need for conventional lineshafting. Unfortunately, however, so far batteries have not allowed shutting down of individual pairs of rolls or even of separate roll stands, and the differential and drive arrangements still seem to take up a great deal of space in proportion to the length of roller contact.

The introduction of pneumatic lifts operating through the roll stand, as just referred to, has made it possible to construct large mills without a floor underneath the rollermills. To do this at present it is usual to mount a separate motor to drive each pair of rolls but this is still a fairly expensive proposition. The matter of whether unit drives or lineshaft drives are employed, however, is likely to depend on individual projects and ideas for some time to come. Along with this, there is real need for a saving in floor space and a retention of operating simplicity.

It would also seem necessary to retain some safety feature such as that afforded by a belt which can slip or come off with chokes or failures, or the fuse on a unit drive circuit which will stop the motor as the result of an overload.

Perhaps the new types of plastic belts which have been developed during the past few years will allow certain new approaches in design; in fact, it might be possible to run a high speed lineshaft through the base of a line of rollermills and employ short endless belts with tighteners to each fast roll. If the rollermills were then constructed so as to lift out the rollers with bearings, sprockets and pulleys complete during changes, it should be possible to make a very worthwhile saving in floor space, at the same time retaining enough space to allow convenient access to all parts. The roll bases could be used as hangers for the lineshaft bearings and installation costs should be lower than anything presently available.

Another alternative could be found in the same layout with a roller chain drive and differential straight from the lineshaft. If a satisfactory clutch were provided for engaging and disengaging the drive sprocket to the lineshaft, preferably adjustable to slip under differing loads, an even smaller space would be required between roll stands.

Perhaps again, it will be possible to develop some other form of mechanism to obsolete any drive to the slow roll. As inferred above, this roll is really driven from the fast roll, and the differential is required to reduce the speed of travel, not to increase it. A mechanical or hydraulic brake

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might be invented to take over this function and if this proved practical, we might yet see some major changes in rollermill construction. «

In a forthcoming issue Mr. Franklin will discuss roll speed, floating stocks, bearings, roller surface, feeders, settings, and related subjects pertinent to rollermills.

New Grain Facilities

Waterville (Wash.) Union Grain has more than doubled its office headquarters and garage facilities, observing the event with an open house. The new structure replaces an older one built in 1909. The new quarters provide space for an office, reception room, two private offices, conference area, grading and analysis rooms, plus garage area for nine vehicles. Waterville Union now handles 3 million bushels of wheat a year and has 500 patron members. It has storage capacity for 4 million bushels in seven communities. «

OFFICES MOVED

International Milling Co. has moved its bakery flour, family flour and millfeed sales divisions from the mill location at 120 Childs St., Buffalo, to offices in the Corn Exchange Bldg. downtown. The move eases congestion prevailing because of personnel increases. «

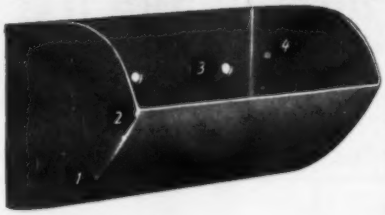
Merck Sales Climb, Net Earnings Drop

Sales of Merck & Co., Inc., and its consolidated subsidiaries for the first six months of 1960 edged slightly above the first half of 1959, but earnings for the period were below last year. Competition from foreign producers in both domestic and foreign markets were credited with having an adverse effect on sales and earnings of many U.S.-made Merck products.

Net sales totaled $111,416,000, or .6% over 1959 first-half sales of $110,787,000. Net income amounted to $14,784,000, equal to $1.37 a share of common stock, but 6.7% less than the $15,847,000 income for first-half 1959 which equaled $1.48 a share.

In the second quarter of 1960, net income was $7,359,000, or 7.9% less than the $7,990,000 income for the second quarter of 1959. First quarter income after taxes this year was $7,425,000, or 5.5% lower than the net income of $7,857,000 earned in the first three months of 1959. «

First Choice Wherever Grain is Handled



Your jobber has them, or write B. I. Weller Company, 327 South LaSalle Street, Chicago 4, Illinois.

(1) The logarithmic curve design loads easier . . . dumps cleaner . . . permits high speeds.
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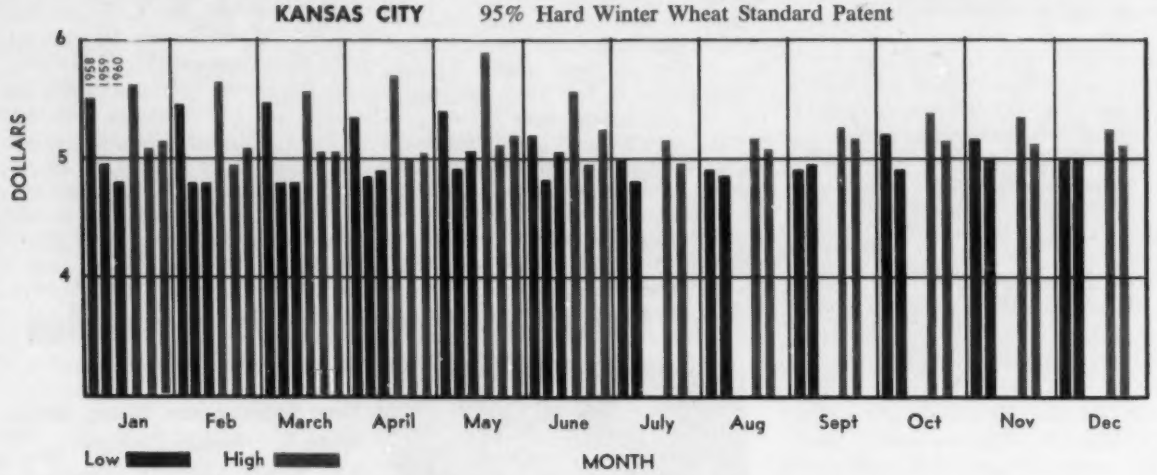
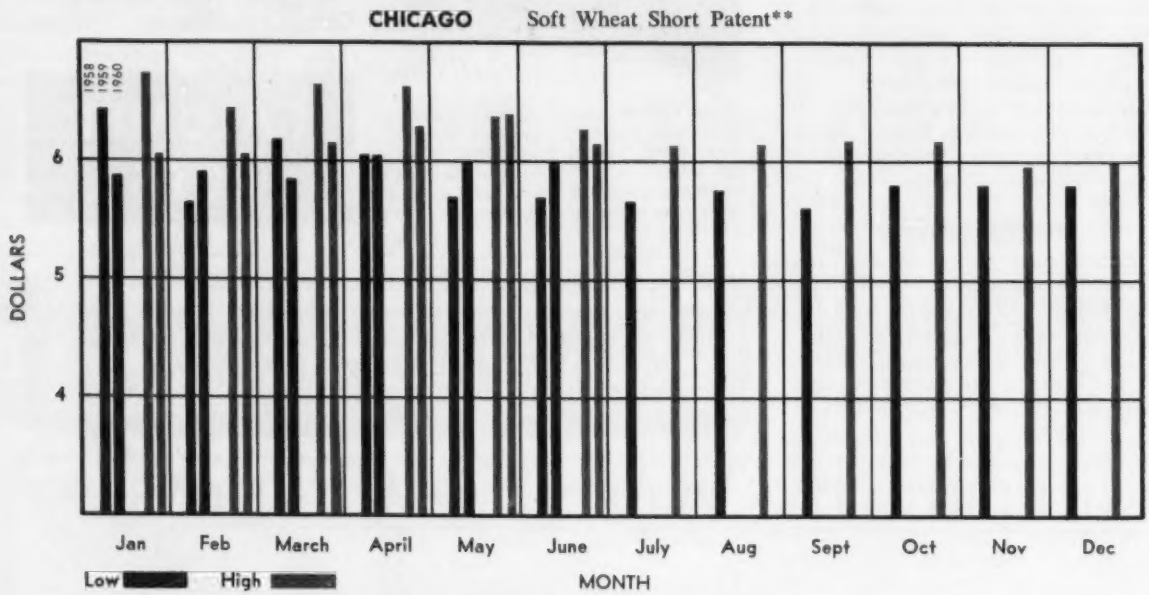
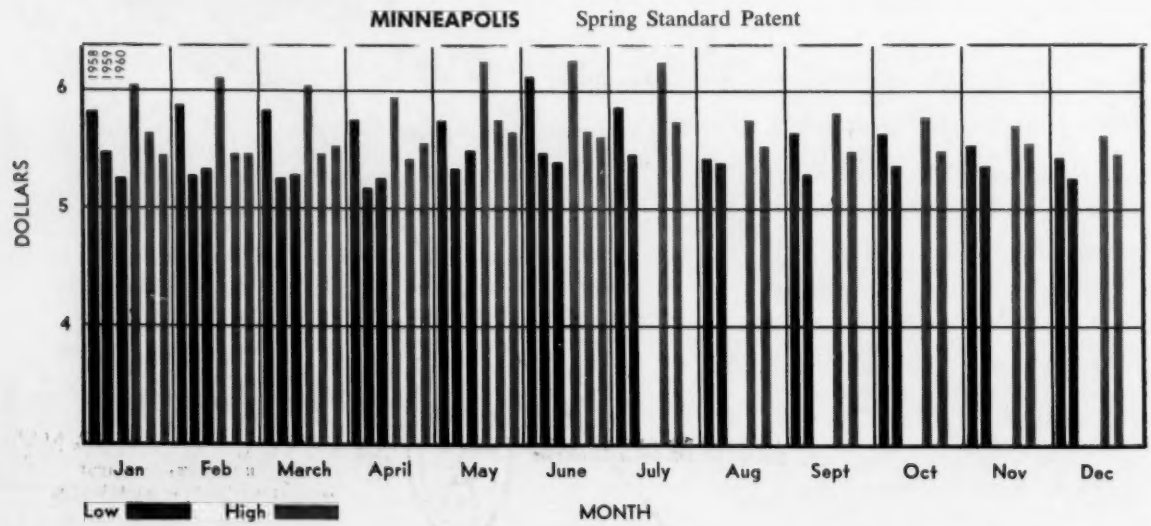
Range of Flour Prices at Major Markets*







*Prices from January, 1958, through January, 1959, on each chart are for flour in 100 lb. sacks. Prices for Kansas City and Minneapolis are bulk quotations beginning with February, 1959.
**Chicago prices are all sacked.
#All quotations nominal, as reported to THE Northwestern MILLER.

NEW!

WEST VIRGINIA'S STANDARD BAG CONSTRUCTION TO SAVE YOU MONEY

Major savings for flour millers are now possible with a new standard WONDERWALL bag construction perfected by West Virginia.

During a controlled test to determine possible savings in bag costs, various WONDERWALL constructions were developed in our Multiwall Packaging Laboratory. They were tested by 25 mills which shipped 96,485 tons of flour in 1,929,706 WONDERWALL bags.

The new standard 100# bag is sewn open mouth, constructed of 1/50, 1/40 and 1/50 Kraftsman Clupak* extensible paper, for a total paper basis weight of 140#. Comparably, a typical 100# natural kraft bag requires *four* plies—3/40, 1/50—or a total of 170#.

The WONDERWALL saving of 30# paper basis weight offers an actual *cash* saving of $4.05 per M bags!

Secret of WONDERWALL strength is Kraftsman Clupak*, the paper with the built-in stretch that withstands far more impact without breaking than conventional natural kraft multiwalls. In a WONDERWALL bag, fewer plies are needed to do the job!

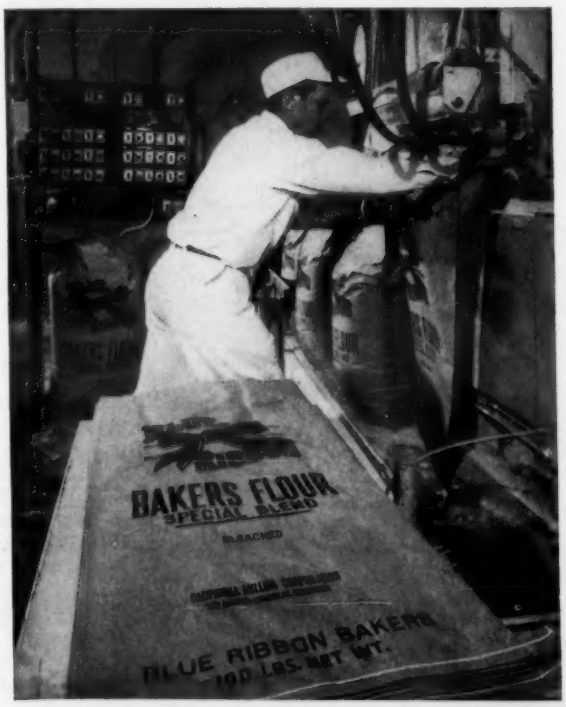
See how the standard WONDERWALL flour bag construction can cut your costs, increase your profits. Our technical service experts are ready to help you take full advantage of this new bag development; call or write Multiwall Bag Division, West Virginia Pulp and Paper Company, 230 Park Ave., New York 17, N.Y.

**Clupak, Inc.'s trademark for extensible paper manufactured under its authority and satisfying its specifications.*

NEW STANDARD WONDERWALL FLOUR BAG CONSTRUCTION

Pounds Packed	Old Style Natural Kraft Construction	New Wonderwall	Actual User Savings
100#	3/40, 1/50	1/50, 1/40, 1/50	$4.05

California Milling Corp., Los Angeles, saved 30# in paper basis weight by switching to a 3-ply, 140# basis weight WONDERWALL, and has thus far packed over 500,000 bags with complete satisfaction. Says Mr. Frank Stanley, Purchasing Agent: "When we tested the 140# WONDERWALL, we told our men to drop it as many times as they could. The men tired before the bag broke."



West Virginia Pulp and Paper

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This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

Pneumatic Conveyors

Sprout, Waldron & Co. has compiled a revised bulletin describing its Pneu-Vac negative pressure pneumatic conveyors. It is bulletin 18-G which contains applications and design data as well as a schematic drawing giving complete dimensions. Pneu-Vac is a

negative pressure—or draw-through—conveying system in which the fan is on the opposite side of the collector from the conveying line. The product is not passed through the fan. Copies of the bulletin are available on request.

Circle No. 4557
on Reply Form for Details

Seed Separator

An electronic seed separator designed by an English firm, G. W. Gunson (Seeds), Ltd., is said to sort small grains automatically by electrostatic color separation. It rejects grains which are spotted or stained and colored foreign bodies. The machine color-separates red wheat from white, ergot from rye, black oats from white, and many other combinations. It separates decorticated rice grains at the rate of 180 lb. an hour. Separation is automatic and takes place in mid-air without mechanical aid or guidance through the electric charging and later deflection of any article which appears to be of a different color. The electric charging is almost instantaneous and is lost immediately afterward without affecting the internal composition or germinability of the seed. The machine is contained in a single cabinet occupying 54 in. by 20 in. of floor space.

Circle No. 4558
on Reply Form for Details

Bulletin Describes Feeders, Rotary Valves

A bulletin, No. F-5A, describing and illustrating its complete line of roll and vane-type feeders and rotary valves, is offered by Fuller Co. The feeders, built of cast iron or iron and steel combinations, are designed to handle a large variety of dry pulverized and granular materials. The bulletin includes descriptions of the various types of feeders and lists materials handled by them, such as grains and food products, among others. Five photographs and 20 drawings of different type feeders appear in the bulletin, and five tables give key dimension and capacity figures.

Circle No. 4559
on Reply Form for Details

Magnetic Separator

A permanent, rotating field laboratory magnetic separator for removal of magnetite and other highly magnetic substances from granulated materials in a dry state, including foods, seeds and grain, is available from Carpco Manufacturing Co. Designated Model RF-1660, the unit can handle rates of materials fed up to 600 lb. an hour. The unit is compact and comes equipped with a vibrating feed [illegible] into a downward volute curve which curtain-feeds the material to be separated under a cylindrical stainless steel housing. Inside are permanent magnets rotating on a hub in a direction counter to the downward fall of the material.

Circle No. 4560
on Reply Form for Details

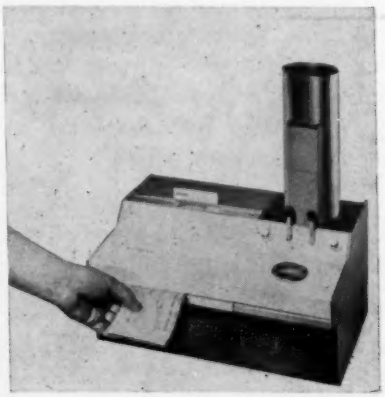
Booklet on Hazards

Foster D. Snell, Inc., chemical consultant firm, has released a booklet discussing the measurement, detection, correction and litigation of casualty, fire, pollution and product-liability hazards. The booklet stresses prevention of these hazards by means of plant appraisals, precautionary labeling, toxicological testing, etc. It also emphasizes the need for promptly calling in an expert in the investigation of industrial accidents when a mishap occurs, for any delay may occasion the loss of key pieces of evidence needed in later litigation, which only the expert is qualified to recognize and evaluate. "Hazards" was written with the aid of insurance adjusters, plant safety officers, engineers and others interested in the mitigation and avoidance of accidents.

Circle No. 4561
on Reply Form for Details

Moisture Tester

Burrows Equipment Co. has available a moisture recorder, which is a testing device said to incorporate many scientific advances to make the recording operation completely auto-



matic, eliminating charts and temperature corrections. The recorder utilizes recent discoveries in electronics to as-

sure accuracy. Tests for various types of grain are specially programmed by a printed circuit card inserted into the device. A small electronic sensing device in the test cell takes the grain temperature automatically and relays it to the electronic brain. A scientifically designed test cell corrects for any variations in bushel weight. All factors are fed into the electronic circuit and computed by the instrument. Next, a motorized drum revolves and comes to a stop at the correct moisture percentage, which may be read visually on a lighted dial. A major feature of the recorder is a special printing device which permanently records the moisture percentage on a scale ticket or other slip of paper if desired.

Circle No. 4562
on Reply Form for Details

Sampling Probe

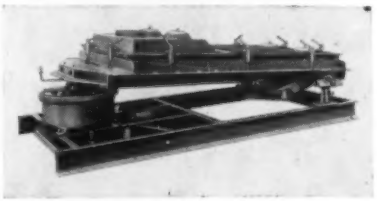
A three-section probe designed for sampling boxcars has been marketed by Seedburo Equipment Co. It was developed, says the manufacturer, to

eliminate the awkward method of inserting a probe within the limited headroom available in most cars. When using the new instrument in limited working space, the main section is first inserted into the grain. The handle then is removed and the extension section screwed on to lengthen the probe to a total of 96 in.

Circle No. 4563
on Reply Form for Details

Gyro Sifters

Young Machinery Co., Inc., which recently acquired the plant and facilities of Robinson Manufacturing Co., has published a bulletin covering its



complete line of Robinson gyro sifters. Units are furnished with single or multiple sieves to make two, three or four separations. An improved, double-balanced drive is said to eliminate vibration. Copies of the bulletin, G-260, are available upon request.

Circle No. 4564
on Reply Form for Details

Dracon Conveyor

J. B. Ehrsam & Sons Manufacturing Co. has published its Bulletin No. E3500 describing the Dracon conveyor, a drag-type said to be self-cleaning and capable of moving more material per horsepower than most conventional conveyors. Each Dracon is assembled completely and inspected prior to shipment, in addition to being template-checked for contour and manufactured to rigid tolerances. The tail section consists of a box end to support the conveyor, tail shaft and sprocket, bearings and bearing plates, adjustable take-ups and clean-out door. The Dracon box consists of 10-ft. sections of standard conveyor trough such as is used for screw conveyors. The head section contains the drive shaft, sprocket and bearings. The chain used is high carbon, all-steel conveyor chain.

Circle No. 4565
on Reply Form for Details

Small Tractor For Bulk Handling

The Mead "Speedcat Low Lift" is now available from Mead Specialties Co. for unloading bulk material from boxcars or other confined areas. This small crawler tractor, with hydraulically operated bucket, can replace hand unloading of grain and other bulk material. The crawler design gives the Speedcat power to operate in and dig into any material. Because of its small size, 41 in. x 84 in., the Speedcat tractor can be operated wherever space limitations prevent the use of large clumsy equipment. Loader models are also available.

Circle No. 4566
on Reply Form for Details

Heavy Duty Cleaner

A heavy-duty, wet-dry vacuum cleaner featuring a demountable motor that readily converts into a compact blower unit, a portable vacuum cleaner which straps on an operator's back and a large capacity vacuum cleaner for use with a standard 55-gallon drum, has been introduced by Clarke Floor Machine Co. According to Clarke, the "versatility and adaptability of the new vacuum cleaner will meet virtually every cleaning requirement." The new cleaning unit is available with a choice of three interchangeable motor units that develop ¾, 1 and 1½ h.p. The new vacuum cleaner also has an external filter and a 15-gal. heavy gauge stainless steel tank, which mounts on either of the

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two carriage bases available, a wheel base with 10 in. diameter, rubber tired rear wheels, two casters and handle or a caster base with four swivel casters.

Circle No. 4567
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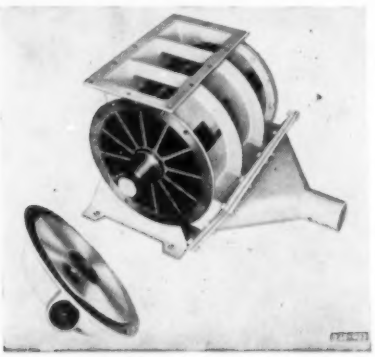
'Air Swept' Feeder

A high pressure "air swept" feeder developed and patented by the Day Co. reportedly eliminates bearing trouble caused when pneumatically conveying certain types of products.



To maintain product flow, high pressure filtered air enters hollow end bells on each end of the feeder and goes into the feeder pockets near the product discharge point, the double inlet action thoroughly mixing air with the product being conveyed. This action is said to sweep the pockets clean and to increase volumetric efficiency. Another feature is the manner in which the air chambers keep a blanket of air between the product and the bearings, preventing contact that might gum up the bearings and rotor shafts.

Circle No. 4568
on Reply Form for Details

Roto-Bin-Dicators

Major design changes have been made in the motor, switch and switch mountings of Roto-Bin-Dicators manufactured by the Bin-Dicator Co., said to result in lower manufacturing costs being passed along to users as price reductions. The connection between the motor output shaft and the clutch housing has been simplified by use of a fixed steel pin and a slotted drive shaft arrangement. In addition, the new motors are more ruggedly constructed, using a larger output shaft and a support pivot of hardened steel. New steel mounting brackets enable the use of two single pole, double throw micro switches tandem mounted in place of the double pole, double throw switch previously used on certain models.

Circle No. 4569
on Reply Form for Details

Vacuum Filter Unit

Systems Engineering & Manufacturing Co., Inc., is offering its SEMCO vacuum filter unit for use in vacuum conveying as a material and air separator. The unit is complete with a self-cleaning cloth filter mechanism. Standard and custom-built models are available from the manufacturer.

Circle No. 4570
on Reply Form for Details

Design, Construction Booklet Offered

Design and construction of grain elevators, flour and feed mills, and similar facilities, are featured in a 40-page booklet published by Weitz-Hettelsater Engineers. More than 20 such facilities are illustrated and de-

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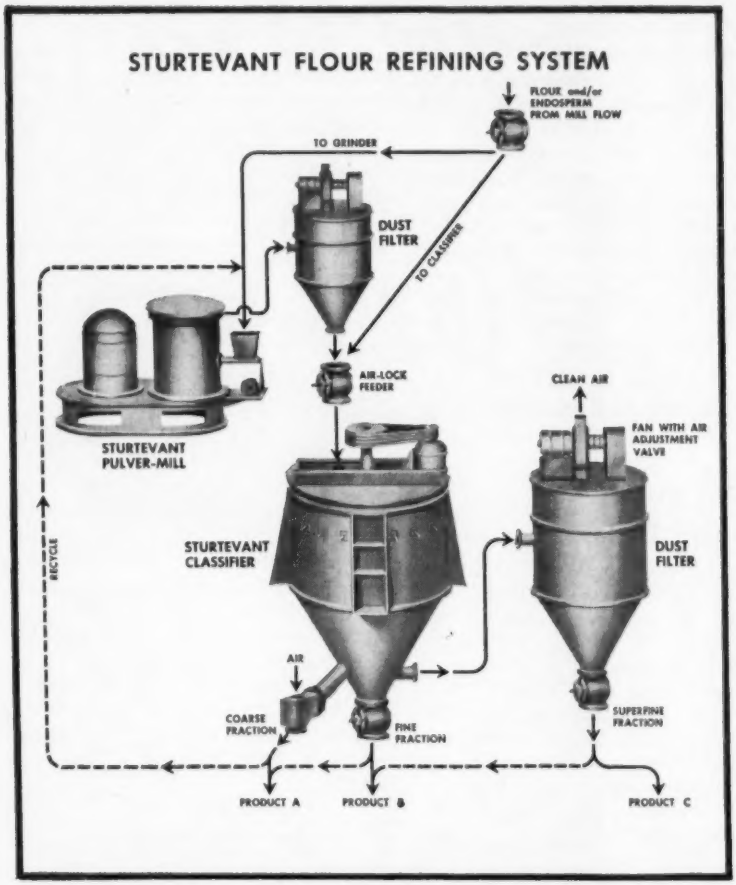
New Sturtevant Flour Refining System is Highly Flexible, Makes Precise Separations



Key to the Sturtevant Refining System shown above is a Sturtevant Air Classifier which can produce 3 kinds of flour in one operation. Both the Pulver-Mill and the Air Classifier have exceptionally large capacities.

For protein shifts... Primary classifications.. Coarse or fine separations for new end products

Sturtevant's new flour refining system is the result of 44 years of experience engineering classification systems for food and other industries.

Heart of the special system is a Sturtevant Air Classifier which classifies coarse, fine and superfine fractions. Low volume of air requirements means smaller dust filters. Thus savings in both space and costs are effected.

The Classifier makes precise selections of end products by means of exact control of air currents and centrifugal force. Simple adjustments in counter action between these two forces permit the receipt of almost any desired particle size.

Operation of Sturtevant's new flour refining system is highly flexible. The Pulver-Mill and Air Classifier can be used singly or together, in accordance with individual grinding-classifying needs.

CALL ON STURTEVANT to help you upgrade your milling system while lowering production costs. Sturtevant Flour Refining Systems offer much higher output capacities than are available elsewhere, yet require only 1/3 as much capital investment.

Write today describing your requirements. A Sturtevant engineer will be happy to make recommendations based on 44 years' successful experience with grinding-classifying problems. Address your letter to *Grain Processing Division, Sturtevant Mill Company, First National Bank Bldg., Fostoria, Ohio.*

CRUSHERS
GRINDERS
MICRON-GRINDERS
SEPARATORS

STURTEVANT MILL COMPANY
BOSTON 22, MASS.

BLENDERS
GRANULATORS
CONVEYORS
ELEVATORS

NEW Ideas, Products, Services

scribed, including those designed and constructed for General Mills, Inc., the Pillsbury Co., Ralston Purina Co. and other major producers. Also included is a complete description of Weitz-Hettelsater services to the grain and feed trade and the story of their development over the past 40 years.

Circle No. 4571
on Reply Form for Details

Handling Trucks

Nestaway, Inc., designer and manufacturer of handling systems for bakeries and other segments of the food industry, is offering three new trucks to be used as supplemental equipment with its patented system of nesting wire racks, rack dividers and caster bases. Originally for use in the baking industry, the Nestaway system is now used in other food manufacturing operations to handle various types of finished products and raw materials. The basic Nestaway system is comprised of wire racks which stack or nest, rack dividers which double the capacity of each rack and caster bases for moving the racks. All three of the new trucks being offered by Nestaway are for use where caster bases are impractical or where combined use of the trucks and bases makes for a more efficient operation. The new trucks are designed to handle stacks of filled racks or empty nested racks.

Circle No. 4572
on Reply Form for Details

Ventilating Filters

Farr Co. has designed its HP family of filters for industrial and commercial ventilating or air conditioning systems requiring high efficiency air filtration. Especially developed to operate at the lowest pressure drop and still provide the highest efficiency and dirt-holding capacity, the filters are claimed to offer low maintenance costs. The HP series of folding, disposable filters is comprised of three interchangeable HP cartridges in three atmospheric ranges. Said to have been thoroughly tested in the laboratory and under actual operating conditions, Farr HP filters are supposed to operate at positive efficiency without requiring power, water or drain facilities, in addition to being flame-proof.

Circle No. 4573
on Reply Form for Details

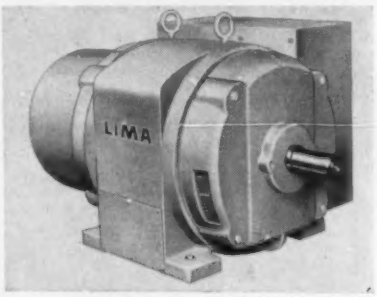
Timing Drive Selection Bulletin

An eight-page bulletin, "5 Simple Steps to the Selection of Timing Belt Drives," is available from T. B. Wood's Sons Co. It reportedly gives a method involving a minimum of mathematics for the selection of a drive to fit any application. The bulletin includes five sets of curves for drive-width selection, developed by Wood's engineering department, to eliminate tedious computation. A standard timing belt catalog is the only outside reference said to be necessary.

Circle No. 4574
on Reply Form for Details

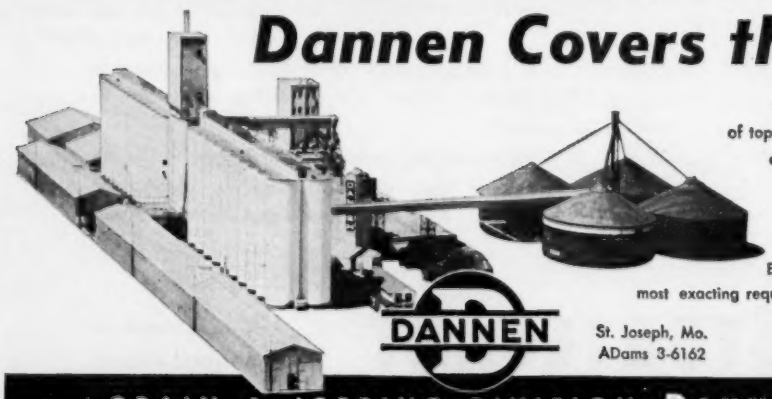
Motor Generators

A line of "precise power" and "special brushless" alternating current generators and motor generators has been announced by Lima Electric Motor Co.. Inc., subsidiary of Consolidated Diesel Electric Corp. Custom designing is available to meet the needs of a number of special applications. Ratings are available from 5 kilowatts



through 100 kilowatts in open-type construction with static exciter-regulators. Inherent regulation to ±10% or magnetic amplifier regulation to ±1% is possible. The special brushless AC generators with drip-proof construction are adaptable for engine mount or direct coupling to driving motor.

Circle No. 4575
on Reply Form for Details



Dannen Covers the Midlands

Strategically located, Dannen furnishes all types of top-quality milling wheat from points throughout the entire winter wheat area. Over 25 million bushels of storage space in terminal elevators and twenty-six country stations is your assurance of dependable Dannen service.

Experienced wheat buyers, skilled in meeting the most exacting requirements, are anxious to serve you. Call today.

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GRAIN & JOBBING DIVISION—DANNEN MILLS, INC.

CANADIAN COMMENTARY

Robin Hood Buys Soup Business

Robin Hood Flour Mills, Ltd., is in the soup business. The milling company has purchased Belmar Soups from the Toronto firm of Arthur F. Johnson & Sons. Production will be transferred to the facilities of Robin Hood in Montreal. Belmar manufactures a line of dehydrated mixes, including chicken noodle, chicken rice, cream of chicken, cream of mushroom and cream of onion, which will be distributed by Robin Hood sales representatives across Canada.

Opinion Given on Consumption Drop

D. Alec Ross, president of Canada's National Council of the Baking Industry, does not attach much significance to the reported drop in per capita consumption of bread from 99.9 lb. to 99.7 lb. as reported by the Dominion Bureau of Statistics for 1958. Mr. Ross points out that the figures do not include consumption of rolls, a bread product which has been enjoying increasing popularity during recent years, and which is, in fact, an alternative for loaf bread. He also expresses the opinion that bread consumption in Canada on a per capita basis is very close to a point of stability, and that relatively minor increases or decreases may be expected from now on.

"Types of bread and bakery products, however, are changing considerably in public favor." Mr. Ross says this results "partly because of the influence of European immigration introducing new preferences and partly because of the industry's continuing effort to whet the public appetite with a wider choice of all types of bakery foods."

Good Durum Yield Expected

Despite a 13% drop in acreage, Canada will have a larger macaroni wheat crop than last year. A survey conducted by Catelli Durum Institute, following a recent field survey, estimates that durum varieties will still produce 19 to 20 bu. acre, compared with 15 last year. The Institute places this year's durum crop at 17,625,000 bu. compared with approximately 15,000,000 bu. in 1959. «

LONDON FOOD FAIR COMING UP

★

Watch for Canadians at Britain's Food Fair in London Sept. 1-17. The goal is to recover markets for Canadian products in the U.K., and others now in the British market hope to step up their sales volume. Approximately 25 Canadian firms will exhibit under sponsorship of the Department of Trade and Commerce, Ottawa.

"Golden Loaf" FLOUR

Milled from choice spring wheat under modern laboratory supervision for particular bakers—aged—aerated—bulk or sack loading.

Quality Flour for 59 Years

TENNANT & HOYT COMPANY

LAKE CITY, MINNESOTA

Uniformity

the priceless quality in flour

yours always with . . .

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ANGELITE—cake flour
COOKIE KING—cookie and dough-up flour
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Progressive Milling Since 1821

ACME-EVANS COMPANY, INC., INDIANAPOLIS 9, IND.

for better sanitation at lower cost:

SYNTHETIC PLASTIC COATINGS

applied professionally by Western Waterproofing Company

Modern science has developed effective new materials for better, lower cost sanitation in milling production and storage areas. The new synthetic resins and plastics form slick, tough coatings that fill dirt-catching, insect-harboring crevices in floors, walls, ceilings. The smooth, unbroken plastic surface is easier to clean, and stays clean longer. These versatile products—of which there are many types for a variety of uses—can be applied over any type of construction: wood, metal, concrete, masonry. They are available in a number of colors, textures and price ranges.

Let us show you how these modern coatings can help you with the big problem of sanitation in your mill. Send coupon today.

WESTERN WATERPROOFING CO., Inc.
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St. Louis 1, Missouri

Please let me know how coatings can improve sanitation in my plant.

NAME_____

COMPANY_____

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CITY_____ ZONE____ STATE_____

Francis H. McKown

Francis H. McKown, whose election as president of Kansas Milling Co. was reported in The MILLER of Aug. 8, page 8, started his milling career 40 years ago. Originally from Ashland, Kansas, he attended the schools there, later enlisted in the U.S. Marine Corps. In 1920 he became associated with the grain department of the former Red Star Milling Co. in Wichita. When General Mills, Inc., acquired the Red Star business in 1929 he was assistant grain buyer and manager of country elevator operations. In 1935 he came to Kansas Milling to head its grain operations, including management of the country elevator department. Mr. McKown has long been interested in wheat quality and was author of—plus being instrumental in promoting—acceptance of the original by-laws of the Kansas Wheat Improvement Assn. During his 25 years with Kansas Milling Mr. McKown's duties have expanded to include a number of positions, such as office manager, director of transportation, among others. Mr. McKown is married. For a number of years he has been vice president and secretary, assuming increasing responsibilities the past year following a heart attack suffered by Elmer W. Reed, president, until his retirement Aug. 1.

F. H. McKown

Eldon H. Addy

Eldon H. Addy, elected as vice president of Kansas Milling Co., came originally from Wellsville, Kansas. He was graduated from Ottawa University in 1937 with a degree in business administration. From 1937 to 1944 he was associated with Transportation Service, Inc., a motor freight carrier headquartered in Detroit. He joined Kansas Milling in 1944 as manager of its Lawrence, Kansas, properties, then came to the Wichita headquarters in 1946 as assistant traffic manager. In 1947 he was assigned to the company's sales department and has had increasing duties in flour sales in recent years. Mr. Addy is married and has a son, 18, and a daughter, 15.

Eldon Addy

E. M. Proctor

A career that started after graduation from MIT back in 1926—when he joined Bemis Bro. Bag Co.—now has brought E. M. Proctor to a position of signal prominence and responsibility. Effective Sept. 1 he becomes assistant director of production for the company's entire far-reaching operations. He was manager of production for western operations. It will mean moving from western headquarters in San Mateo, Cal., to the St. Louis general offices. Mr. Proctor became manager of Visinet (open-mesh) sales in 1939 and was placed in charge of all open-mesh sales and burlap distribution in 1942.

E. M. Proctor

Twelve years ago he was appointed manager of the company's Seattle manufacturing plant. In 1956 he was named manager of production for western operations. «

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TICKER REPORT...

THE NEW YORK STOCK EXCHANGE

Quotations on baking, milling and allied stocks listed on the New York Stock Exchange:

	1960 High	1960 Low	Aug. 10, 1960 Close	Aug. 16, 1960 Close
Allied Mills, Inc.	39½	32	32¾	34½
Allis-Chalmers	40	26⅜	27¼	27⅝
American Bakeries Co.	44⅞	39¾	39¾	42
American Cyanamid	59⅝	47⅛	54½	56¼
Archer-Daniels-Midland Co.	40¼	32½	34¾	34
Borden	50⅛	40¼	49¾	49¼
Continental Baking Co.	48½	37½	38⅛	40½
Pfd. $5.50	105¾	100½	104	105
Corn Products Refining Co.	59¾	46½	59	59
Crown Zellerbach Corp.	54	39¾	43⅞	45½
Dow Chemical	99⅝	78¾	83¾	84⅜
General Baking Co.	12⅜	9¾	10	9⅞
Pfd. $8	146	141	144	144¾
General Foods Corp.	135	98½	125	125½
General Mills, Inc.	31	23⅞	27⅛	27⅞
Pfd. 5%	110½	101½	110	110
Merck & Co.	96½	73	88¾	89
Monsanto Chemical Co.	55⅞	37⅞	39¼	40
National Biscuit Co.	66½	49¾	64	66¼
Pfizer, Chas.	38¼	26⅜	32⅜	32½
Pfd.	100	96½	....	97½
Pillsbury Co.	39½	31⅝	36⅜	35½
Procter & Gamble	136	81¾	122¼	123
Quaker Oats Co.	51¾	42	50½	51½
Pfd. $6	135½	125½	....	134
St. Regis Paper Co.	55½	34½	34½	39
Standard Brands, Inc.	49⅝	35⅛	45¾	47
Sunshine Biscuits, Inc.	94⅝	85	93	94⅜
United Biscuit of America	39⅜	24	35½	36½
Ward Baking Co.	15¾	10¾	11¼	12
Pfd. $5.50	89½	84¾	....	86
West Virginia Pulp & Paper Co.	56¾	37	39¼	40

Stocks not traded:

	Bid	Asked
Allis-Chalmers, $3.25 Pfd.	102½	104
Corn Products Refining Co., $7 Pfd.	88	90
Cream of Wheat	35¼	35⅞
Crown Zellerbach Corp., $4.20 Pfd.	93	94
National Biscuit Co., $7 Pfd.	157	157½
Pillsbury Co., $4 Pfd.	92½	98
St. Regis Paper Co., $4.40 Pfd.	92½	93
Standard Brands, Inc., $4.50 Pfd.	77	77¾
United Biscuit of America, $4.50 Pfd.	95	99
West Va. Pulp & Paper Co., Pfd.	95¾	97½

THE AMERICAN STOCK EXCHANGE

Quotations on baking, milling and allied stocks listed on the American Stock Exchange:

	1960 High	1960 Low	Aug. 10, 1960 Close	Aug. 16, 1960 Close
Burry Biscuit Corp.	12⅜	7¼	11½	12⅜
Horn & Hardart Corp. of N.Y.	36¾	32½	35½	35¼

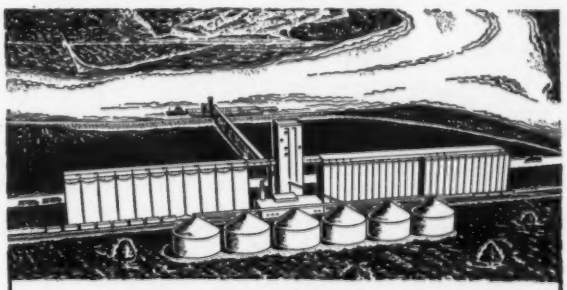
Stocks not traded:

	Bid	Asked
Wagner Baking Co.	3¾	4
Pfd.	70	80

CANADIAN STOCKS

	1960 High	1960 Low	July 29, 1960 Close	Aug. 5, 1960 Close
Canada Bread	3.75	3.50	....	3.65
Canada Bread, Pfd. B	52	49⅝	....	49⅝
Can. Bakeries	6¾	5½	....	6¾
Can. Food Prod.	4.50	3.10	3.50	3.40
Can. Food Prod., A	10	6½	8¾	9½
Can. Food Prod., Pfd.	67	45⅛	65	67
Catelli Food, A	40	38	....	39¾
Cons. Bakeries	9	7⅞	*7	*7½
Dover Ind.	13½	11	11⅛	11⅛
Dover Ind., Pfd.	9	9	....	9
Federal Grain	48	39	....	42½
Federal Grain, Pfd.	27½	25½	26¾	26¾
Gen. Bakeries	9	7	7⅜	7⅜
Lake of the Woods, Pfd.	130⅝	114	....	130⅝
Maple Leaf Mlg.	14⅝	11¼	14	14½
Maple Leaf Mlg., Pfd.	90	85	....	90
McCabe Grain	33	26	....	26
Ogilvie Flour	46½	40	41	42
Ogilvie Flour, Pfd.	140	125	....	130
Standard Brands	39½	37¼	....	39½
Toronto Elevators	13	9	9¼	9¼
United Grain, A	15⅝	15½	15⅝	15⅝
Weston, G., A	35¼	29	33½	33½
Weston, G., B	37	28½	34	34⅛
Weston, G., Pfd. 4½%	90	82	....	90

*Less than board lot.



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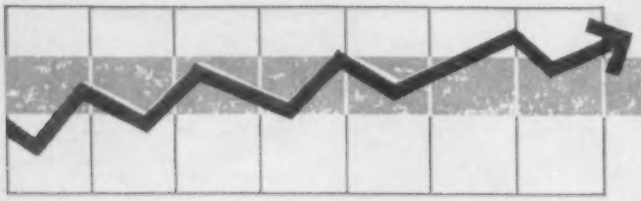

FLOUR PRODUCTION

A Statistical Service Provided Continuously for Readers of The Northwestern Miller for More than Half a Century.

WEEKLY FLOUR PRODUCTION, IN SACKS (CWT.)

Flour production in principal manufacturing areas by mills reporting currently to The Northwestern Miller with relationship of production to capacity and to the total estimated output of all mills in the U.S. expressed in percentages:

	July 31-Aug. 7, 1960	*Previous week	Aug. 2-9, 1959	Aug. 3-10, 1958	Aug. 4-11, 1957
Northwest	757,787	689,155	729,165	706,230	722,472
Southwest	1,349,407	1,365,052	1,515,386	1,331,527	1,205,735
Buffalo	522,318	545,639	496,847	548,007	595,735
Central and Southeast	619,077	591,240	644,816	583,638	559,869
Pacific Coast	417,625	405,312	468,088	249,988	326,910
Totals	3,666,214	3,596,398	3,854,302	3,419,390	3,410,473
Percentage of total U.S. output	77.3	77.3	75	75	75
Estimated total U.S. production	4,742,838	4,652,520			
Accumulated total this month	4,742,838				

*Revised.

	—Percentage of capacity operated in 5-day week— July 31-Aug. 7, 1960	Previous week	Aug. 2-9, 1959	Aug. 3-10, 1958	Aug. 4-11, 1957	Crop year flour production ——July 1 to—— Aug. 7, 1960	Aug. 9, 1959
Northwest	106	97	101	106	108	3,403,809	3,800,805
Southwest	103	104	117	101	91	6,884,192	7,997,118
Buffalo	100	105	101	115	125	2,763,424	2,831,180
Central and S.E.	92	88	100	102	98	3,098,022	3,395,600
Pacific Coast	98	84	100	79	92	2,091,330	3,430,331
Totals	99	98	106	102	101	18,240,777	20,445,034

NORTHWEST

Minneapolis

	5-day week capacity	Flour output	% capacity
July 31-Aug. 7	240,000	225,630	94
Previous week	240,000	*202,847	85
Year ago	231,000	193,576	84
Two years ago	237,000	227,835	96
Five-year average			54
Ten-year average			79

*Revised

Principal interior mills in Minnesota, including Duluth, St. Paul, North Dakota, Montana and Iowa:

	5-day week capacity	Flour output	% capacity
July 31-Aug. 7	472,750	532,157	113
Previous week	472,750	*486,308	103
Year ago	494,500	535,589	108
Two years ago	430,500	478,395	111
Five-year average			147
Ten-year average			132

*Revised

CENTRAL AND SOUTHEASTERN

Mills in Illinois, Ohio, Michigan, Wisconsin, Indiana, Kentucky, North Carolina, Tennessee, Virginia, Georgia and eastern Missouri:

	5-day week capacity	Flour output	% capacity
July 31-Aug. 7	672,260	619,077	92
Previous week	672,260	*591,240	88
Year ago	643,750	644,816	100
Two years ago	570,260	583,638	102
Five-year average			100
Ten-year average			103

*Revised

SOUTHWEST

Kansas City

	5-day week capacity	Flour output	% capacity
July 31-Aug. 7	224,250	246,821	110
Previous week	224,250	254,354	113
Year ago	221,750	288,287	130
Two years ago	287,500	232,184	81
Five-year average			157
Ten-year average			138

Representative Mills, Outside of Kansas City (Including Wichita and Salina)

	5-day week capacity	Flour output	% capacity
July 31-Aug. 7	1,090,750	1,102,586	101
Previous week	1,090,750	*1,110,698	102
Year ago	1,068,800	1,227,099	115
Two years ago	1,032,000	1,099,343	107
Five-year average			145
Ten-year average			123

*Revised

BUFFALO

	5-day week capacity	Flour output	% capacity
July 31-Aug. 7	522,000	522,318	100
Previous week	522,000	*545,639	105
Year ago	493,500	496,847	101
Two years ago	475,000	548,007	115
Five-year average			61
Ten-year average			90

*Revised

PACIFIC COAST

Principal Mills on the Pacific Coast

California, Oregon and Washington Mills

	5-day week capacity	Flour output	% capacity
July 31-Aug. 7	466,500	417,625	90
Previous week	466,500	*405,312	87
Year ago	466,500	468,088	100
Two years ago	315,000	249,988	79

*Revised

DURUM PRODUCTS OUTPUT

Durum products output of mills, reporting to The Northwestern Miller, in sacks, based on five-day week:

	5-day wk. capacity	Wkly. production	% of capacity
July 31-Aug. 7	177,500	194,016	109
Previous week	177,500	*180,689	102
Year ago	156,500	189,682	121

	Crop year production
July 1-Aug. 7, 1960	*782,939
July 1-Aug. 9, 1959	917,660

*Revised

●

Industry Statistics

Canadian Millfeed Production and Exports

By crop years ending July 31, in tons. Source: Dominion Bureau of Statistics.

Crop years	Production	Exports
1958-59	664,474	52,303
1957-58	688,706	110,359
1956-57	641,885	111,943
1955-56	703,376	111,660
1954-55	696,450	129,309
1953-54	678,476	186,213
1952-53	810,830	264,949
1951-52	829,301	258,342
1950-51	852,053	235,301
1949-50	691,812	55,393
1948-49	695,346	53,969
1947-48	868,866	30,502
1946-47	970,652	40,414
1945-46	881,844	32,170

Minneapolis Flour Mills

Daily capacity in sacks. Source: The Northwestern Miller.

Atkinson Milling Co.	7,000
General Mills, Inc.	20,500
King Midas Flour Mills	2,600
Commander Larabee Milling Co.	8,200
Pillsbury Co.	11,000
Total	49,300

Production for July 31-Aug. 7 is at the left; for Aug. 7-14 appears here

WEEKLY FLOUR PRODUCTION, IN SACKS (CWT.)

Flour production in principal manufacturing areas by mills reporting currently to The Northwestern Miller with relationship of production to capacity and to the total estimated ouput of all mills in the U.S. expressed in percentages:

	Aug. 7-14, 1960	*Previous week	Aug. 9-16, 1959	Aug. 10-17, 1958	Aug. 11-18, 1957
Northwest	802,460	757,787	763,021	725,002	759,548
Southwest	1,395,099	1,349,407	1,351,262	1,278,933	1,253,450
Buffalo	357,619	522,318	568,684	557,072	570,822
Central and Southeast	585,457	619,077	613,893	593,682	520,286
Pacific Coast	399,302	417,625	473,751	404,903	340,022
Totals	3,539,937	3,666,214	3,770,611	3,559,592	3,444,128
Percentage of total U.S. output	74.9	77.3	75	75	75
Estimated total U.S. production	4,726,218	4,742,838			
Accumulated total this month	9,469,056	4,742,838			

*Revised.

	—Percentage of capacity operated in 5-day week—					Crop year flour production ——July 1 to——	
	Aug. 7-14, 1960	Previous week	Aug. 9-16, 1959	Aug. 10-17, 1958	Aug. 11-18, 1957	Aug. 14, 1960	Aug. 16, 1959
Northwest	113	106	105	109	114	4,206,269	4,563,826
Southwest	106	103	105	97	95	8,279,291	9,348,380
Buffalo	69	100	115	117	120	3,121,043	3,399,864
Central and S.E.	87	92	95	104	91	3,683,479	4,009,493
Pacific Coast	86	90	102	129	96	2,490,632	2,904,082
Totals	96	99	104	106	102	21,780,714	24,225,645

NORTHWEST

Minneapolis

	5-day week capacity	Flour output	% capacity
Aug. 7-14	240,000	233,052	97
Previous week	240,000	*225,630	94
Year ago	231,000	212,342	88
Two years ago	237,000	226,472	96
Five-year average			54
Ten-year average			79

*Revised.

Principal interior mills in Minnesota, including Duluth, St. Paul, North Dakota, Montana and Iowa:

	5-day week capacity	Flour output	% capacity
Aug. 7-14	472,750	569,408	120
Previous week	472,750	*532,157	113
Year ago	494,500	550,679	111
Two years ago	430,500	498,530	116
Five-year average			151
Ten-year average			134

*Revised.

CENTRAL AND SOUTHEASTERN

Mills in Illinois, Ohio, Michigan, Wisconsin, Indiana, Kentucky, North Carolina, Tennessee, Virginia, Georgia and eastern Missouri:

	5-day week capacity	Flour output	% capacity
Aug. 7-14	672,260	585,457	87
Previous week	672,260	*619,077	92
Year ago	643,750	613,893	95
Two years ago	570,260	593,682	104
Five-year average			101
Ten-year average			103

*Revised.

SOUTHWEST

Kansas City

	5-day week capacity	Flour output	% capacity
Aug. 7-14	224,250	264,492	118
Previous week	224,250	246,821	110
Year ago	221,750	219,210	99
Two years ago	287,500	202,886	71
Five-year average			159
Ten-year average			139

Representative Mills, Outside of Kansas City (Including Wichita and Salina)

	5-day week capacity	Flour output	% capacity
Aug. 7-14	1,090,750	1,130,607	104
Previous week	1,090,750	*1,102,586	101
Year ago	1,068,800	1,132,052	106
Two years ago	1,032,000	1,076,047	109
Five-year average			146
Ten-year average			123

*Revised.

BUFFALO

	5-day week capacity	Flour output	% capacity
Aug. 7-14	522,000	357,619	69
Previous week	522,000	*522,318	100
Year ago	493,500	568,684	115
Two years ago	475,000	557,072	117
Five-year average			56
Ten-year average			88

Millfeed Production

Mills in the Northwest, Southwest and at Buffalo, representing 75% of the combined flour milling capacities of those areas, reported production of 48,216 tons of millfeed for August 7-14, compared with an output of 50,627 in the corresponding week a year ago. Production for the previous week of July 31-Aug. 7 was 49,619, compared to 51,730 in the corresponding week of last year.

PACIFIC COAST

Principal Mills on the Pacific Coast
California, Oregon and Washington Mills

	5-day week capacity	Flour output	% capacity
Aug. 7-14	466,500	399,302	86
Previous week	466,500	*417,625	90
Year ago	466,500	473,751	102
Two years ago	315,000	404,903	129

*Revised.

DURUM PRODUCTS OUTPUT

Durum products output of mills reporting to The Northwestern Miller, in sacks, based on five-day week:

	5-day wk. capacity	Wkly. production	% of capacity
Aug. 7-14	177,500	192,417	108
Previous week	177,500	*194,016	109
Year ago	156,500	186,059	119

	Crop year production
July 1-Aug. 14, 1960	975,356
July 1-Aug. 16, 1959	1,103,719

*Revised.

●

Industry Statistics

Canadian Mill Capacities

Daily capacity in hundredweights. Source: THE Northwestern MILLER.

Montreal, Que.	25,200
Port Colborne, Ont.	24,000
Keewatin, Ont.	10,000
Winnipeg-St. Boniface, Man.	17,000
Calgary, Alta.	17,000
Saskatoon, Sask.	11,600
Medicine Hat, Alta.	10,500
Humberstone, Ont.	9,700
Moose Jaw, Sask.	8,500
Toronto, Ont.	10,600
Vancouver, B.C.	4,400
Midland, Ont.	5,000
Lethbridge, Alta.	3,100
Galt, Ont.	2,400
St. Mary's, Ont.	1,800

In addition to these large mills, there are many small country mills scattered over the various provinces.

WHERE THEY ARE MEETING

September

Sept. 9-10—District 7, Association of Operative Millers; Lake Murray Lodge, Ardmore, Okla.; sec., Henry H. Stark, Ross Machine & Mill Supply Co., Oklahoma City, Okla.

Sept. 11-13—Southern Bakers Assn., annual production conference; Dinkler Plaza Hotel, Atlanta, Ga.; sec., Benson L. Skelton, Henry Grady Bldg., 26 Cain St. N.W., Atlanta 3, Ga.

Sept. 13—Bakers Courtesy Club of Pittsburgh, annual bakers clinic and tri-state convention; Webster Hall Hotel, Pittsburgh; sec., John P. Byrnes, 1133 Penn Ave., Pittsburgh.

Sept. 15-16—Virginia Bakers Council, Inc., 1960 Virginia Bakers Conference; Williamsburg Lodge, Williamsburg Va.; sec., Harold K. Wilder, 5 South 12th St., Richmond, Va.

Sept. 16-17—District 5, Association of Operative Millers; Pere Marquette State Park, Grafton, Ill.; sec., G. Edward Mehlack, Alexander Bros. Belting Co., Chicago.

Sept. 16-17—District 1, Association of Operative Millers; Rambler Hotel, Hutchinson, Kansas; sec., Richard Magerkurth, C-G-F Grain Co., Topeka, Kansas.

Sept. 17-20—New Jersey Bakers Board of Trade, Inc., annual convention and exhibition; The Berkeley Carteret Hotel, Asbury Park, N.J.; sec., Michael Herzog, 48 Claremont Ave., New Brunswick, N.J.

Sept. 18-21—Missouri Bakers Association, fall outing and meeting; starting at 5 p.m., Sept. 18, ending after breakfast Sept. 21, Arrowhead Lodge, Lake Ozark, Mo.; sec., George H. Buford, 2214 Central Ave., Kansas City 2, Kansas.

Sept. 21-23—Pennsylvania Millers & Feed Dealers Assn.; Hotel Penn Harris, Harrisburg Pa.; sec., Donald W. Parke, P.O. Box 329, Ephrata, Pa.

Sept. 22-23 — Michigan State Millers Assn., annual meeting; Hidden Valley, Gaylord, Mich.; sec., C. D. McKenzie, Jr., P.O. Box 35, Owosso, Mich.

Sept. 23-24—District 2, Association of Operative Millers; Aladdin Hotel, Kansas City, Mo.; sec., George Smutny, Safety Industries, Inc., Kansas City, Mo.

Sept. 24-26—Southwest Bakers Assn., annual convention; Herring Hotel, Amarillo, Texas; sec., J. R. L. Kilgore, P.O. Box 127, Albuquerque, N.M.

Sept. 30-Oct. 1—District 9, Association of Operative Millers; Benjamin Franklin Hotel, Seattle, Wash.; sec., Richard Schmidt, Centennial Mills, Inc., Spokane, Wash.

October

Oct. 2—Kansas Bakers Assn., annual fall meeting; Allis Hotel, Wichita, Kansas; sec., Warren M. Burke, 3232 Roanoke Rd., Kansas City, Mo.

Oct. 5-7—Association of Cereal Research, annual milling convention, Detmold, West Germany; address correspondence to the secretary, c/o Arbeitsgemeinschaft Getreideforschung E.V., Detmold, Am Schotzenberg 9, Postfach 23, W. Germany.

Oct. 7-8—District 3, Association of Operative Millers; Severin Hotel, Indianapolis, Ind.; sec., John Money, Quaker Oats Co., Akron, Ohio.

Oct. 15—District 6, Association of Operative Millers; Williams Milling Co., Quincy, Mich.; sec., Oscar Nelson, King Milling Co., Lowell, Mich.

Oct. 15-19—American Bakers Assn., annual meeting and convention; Hotel Sherman, Chicago, Illinois; sec., Harold Fiedler, 20 N. Wacker Drive, Chicago, Illinois.

Oct. 16—Bakery Equipment Manufacturers Association, Fall meeting; Hotel Sherman, Chicago, Illinois; sec., Raymond J. Walter, 511 Fifth Avenue, New York 17, N.Y.

Oct. 22—District 8, Association of Operative Millers; Lenox Hotel, Buffalo, N.Y.; sec., Roy F. Kehr, Kressilk Products, Inc., Depew, N.Y.

Oct. 24—Connecticut Bakers Assn., Inc., annual convention; Hotel Stratford, Bridgeport, Conn.; sec., Charles Barr, 584 Campbell Ave., West Haven 16, Conn.

Oct. 28-29—District 11, Association of Operative Millers; Robert E. Lee Hotel, Winston Salem, N.C.; sec., J. L. Campbell, Sterwin Chemicals, Inc., 5435 Northside Road, Charlotte, N.C.

November

Nov. 4-5—District 13, Association of Operative Millers; Palliser Hotel, Calgary, Alta., Canada; sec., Gerald Dennehy, Merck & Co., Winnipeg, Man., Canada.

Nov. 5-6—Nebraska Bakers Assn., annual convention; Town House, Omaha, Neb.; sec., Louis F. O'konski, Jr., Standard Brands, Inc., 1806 Chicago St., Box 1042, Omaha, Neb.

Nov. 11-12—District 12, Association of Operative Millers; Ben Lomond Hotel, Ogden, Utah; sec., Joseph J. Keiser, Salt Lake Flour Mills, Salt Lake City, Utah.

Nov. 14-15 — New England Bakers Assn., fall convention; Sheraton-Plaza Hotel, Boston, Mass.; sec., William E. Bowman, 945 Great Plain Ave., Needham 92, Mass.

Nov. 14-15—Washington Association of Wheat Growers, annual convention; Davenport Hotel, Portland, Ore.; sec., Milton Wolf, Latah, Wash.

December

Dec. 10—District 2, Association of Operative Millers; Aladdin Hotel, Kansas City, Mo.; sec., George Smutny, Safety Industries, Inc., Kansas City, Mo.

1961

January

Jan. 14-17—Ohio Bakers Assn., annual convention; Carter Hotel, Cleveland, Ohio; sec., Clark L. Coffman, Seneca Hotel, Columbus, Ohio.

January 20-21—District 10, Association of Operative Millers; Fresno Hacienda Motel, Fresno, Cal.; sec., Gene Thomas, California Mill Equip. Co., San Mateo.

Jan. 29-31—Potomac States Bakers Assn., 45th annual winter convention; Lord Baltimore Hotel, Baltimore, Md.; sec., Edwin C. Muhly, 1126 Mathieson Bldg., Baltimore, Md.

CALENDAR FOR 1960-61

AUGUST

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"Tell me again that part about 'you're beautiful'"

"You're beautiful because your colors are bright —and you're so loaded with that certain perfection Chase always gives!" "That certain perfection" is really a host of little details that Chase never overlooks. For instance, every Chase plant employs an "Ink Man," just to keep constant watch over hundreds of different hues, and to help Chase's skilled color-printing craftsmen put them to the very best use. All this so your products go to market in the most inviting way possible! As for *economy* and *utility*... these are an integral part of every Chase Bag. For facts about bags for any purpose, call your Chase Man, or write us.

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Many of the firms appearing in this list are available to handle the importation of other products besides flour. Some specialize additionally in cereals, some in bakers' sundries and others in feed grains and ingredients. Most of them have connections in adjacent countries and are equipped to handle both import and export business on an extensive basis. For a list of recommended firms dealing in specific commodities or in specific countries write to THE Northwestern MILLER, P.O. Box No. 67, Minneapolis 40, Minn., U.S.A.

ENGLAND

H. Cohen & Co., Ltd.
Hambro House, Vintners' Place
LONDON, E.C. 4
Cable Address: Bortrite, London

Mardorf, Peach & Co., Ltd.
52, Mark Lane LONDON, E.C. 3
Cable Address: "Dorfeach," London

GERMANY

Einfuhrhandel Mannheim
Hans Werle
MANNHEIM/GERMANY, E2., 1-3
Cable Address: "Einfuhr" Telex 0463270

DENMARK

Brodr. Justesen
COPENHAGEN
Cable Address: "Justesens," Copenhagen

SCOTLAND

Farquhar Brothers
50 Wellington Street GLASGOW,C.2
Cable Address: "Glencairn," Glasgow

McConnell & Reid, Ltd.
19 Waterloo St. GLASGOW
Cable Address: "Marvel," Glasgow

D. T. Russell & Baird, Ltd.
106 Hope Street GLASGOW,C.2

HOLLAND

Bulsing & Heslenfeld N. V.
Established 1885
Damrak 20-22
AMSTERDAM (C)
Cable Address: "Heslenfeld," Amsterdam

STOLP & CO., LTD.
47-48 Damrak AMSTERDAM
Cable Address: "Cleo"

Gebrs. Van Den Bergh's N. V.
ROTTERDAM
Cables: Locomotion Rotterdam

N. V.
Algemeene Handel-en Industrie Maatschappy
"MEELUNIE"
Heerengracht 209 AMSTERDAM

N. V. Agentuur & Commissiehandel
v/h P. C. Vis & Co.
AMSTERDAM
Cable Address: "Visco"

Luchsinger, Meurs & Co.'s
Handelsmaatschappij, N.V.
AMSTERDAM—C.
Cable Address: "Matluch"

M. WITSENBURG JR. N. V.
Postbox 945 AMSTERDAM C.
Cable Address: "Witburg"

GRIPPELING & VERKLEY N. V.
Flour Specialists Since 1889
AMSTERDAM
Cable Address: Bygrip, Amsterdam

Millers in 44 Overseas Nations Read Every Issue of the Miller

SPOTLIGHT on WASHINGTON

By John Cipperly

RESPONSIBLE PERSONS in the export grain trade are alarmed at the decision of the western railroads to reduce the freight rate on wheat moving out of Kansas, Nebraska and Colorado to Pacific coast ports for shipment to Japan, Formosa, Korea, the Philippines and Okinawa.

☆

The rails, prodded by Great Plains Wheat, Inc., slashed the rate by 17½¢ cwt., from 98½¢ to 81¢. Hailing the move are the wheat men who see the first step in opening up the Asiatic market to their product. They call it the first breakthrough in the massive obstacles which have stopped Great Plains wheat being priced competitively in the Far East.

☆

Big competition for the Great Plains men has been Canadian wheat which can be shipped more advantageously out of Vancouver compared with U.S. red wheat moving from Gulf ports. Under previous tariffs, hard red winter wheat could not move to west coast ports except at commodity rates—and that kept it out of the market.

☆

The GPW men sparked the idea when their eager salesmen reported that Japanese buyers were willing to sample hard red winter if the price could be brought into line with Canadian. The shock troops, led by President Clifford R. Hope, went into action and brought the railroads to their knees.

☆

WHY THE CONCERN? There may have been more than the influence of Cliff Hope in setting up a Balkan-state pattern for freight rates in the U.S. The Republicans are eager to hold some vital senate seats—one in Kansas, one in Nebraska, one in Colorado. The amount of wheat involved in the limited area concerned is between 12 and 20 million bushels—enough wheat to elect three Republican senators. But is it worth the gamble to sacrifice the wheat freight rate pattern of the nation on such grounds? That's what causes the grain traders misgivings.

☆

The day may not be far distant when many other latter day "Balkan" areas may arise asking for special consideration from the carriers so they can do business in foreign markets.

The GPW victory was not complete. The wheat men wanted a rate of 70¢ cwt. but the railroaders balked.

☆

SO WHAT NEXT? Perhaps a demand for special subsidy consideration for this normally out of line grain movement. Commodity Stabilization Service HQ here in Washington has already been sounded out. The fine hand of the astute politician is again evident demanding action from an administrative agency. How difficult it is to direct a farm program within a framework geared primarily to political considerations.

☆

Perhaps the exporters and Far Eastern buyers should base their plans on the basis of a special subsidy for hard red winters moving from the West Coast to compensate for the difference between them and Canadian Manitobas.

On the horizon are some neat moves by the shrewd men of the Canadian Wheat Board as they manipulate their delivery grades to meet such daily price concessions as the eager beaver staff of International Wheat Agreement computers calculate each day.

☆

ON THE SUBJECT OF IWA, one can only conclude that this highly touted document, designed to assure maximum exports from surplus producing nations, within a price range which would assure the importing nations of adequate supplies at reasonable prices, has bogged down into a nice little game at the U.S. Department of Agriculture. There, officials calculate a daily formula about as complicated as a child's game of ticktacktoe . . . and the taxpayers foot the bill for the bounty.

☆

We shut our eyes and estimate a subsidy payment rather than let the price of our wheat drop to what the world is willing and able to pay. This conclusion has nothing to do with a national willingness to give our grain away to those who starve or need food desperately. We do that very thing. But why carry on this self deception of a wheat subsidy when even the progenitors barely recognize their spawn? The IWA subsidy today is little more than a specious device whereby the world's two big wheat exporters—the U.S. and Canada conceal price cutting operations on all wheat shipments, not just those under the agreement. «

There is a lot to be said for

GOOD JUDGMENT

Good judgment has guided Ogilvie Flour Mills for more than a century and a half of leadership in the milling of fine flour. It's good judgment that causes Ogilvie to select only the choicest wheat . . . that combines their skill and knowledge with some of the most modern milling equipment in the world, to produce the unvarying high quality that their customers expect of the name "Ogilvie".

Ogilvie Flour Mills intend to continue using good judgment . . . the same good judgment that tells you it's wise to buy quality!

Manufacturers of Ogilvie Flour—Ogilvie Ready Mixes —Ogilvie Vita-B Wheat Germ Cereal—Ogilvie Oats —Ogilvie "Miracle" Feeds for livestock and poultry.

THE OGILVIE FLOUR MILLS CO., LIMITED

Mills at: Montreal—Fort William—Winnipeg—Medicine Hat—Edmonton
Cable Address: OGILVIE MONTREAL—all codes used

SOME OBSERVERS say that if the U.S. were to market its lowest-in-the-world cost of producing wheat, at world market prices, we would be spared the daily subsidy calculations, the bounties paid on ocean freight, the high cost of hordes of USDA, state and county agents who swarm all over the farm lands, measuring this and that and counting things that are none of their business.

But such things must be left to the card room or the tap room after the bell rings the market close.

☆

The export trade is apprehensive of the growth of these individual commodity groupings now venturing deeper and deeper into the actual marketing of commodities. It accepted the wheat commissions as an accomplished fact—but it accepted them reluctantly. «

July Flour Production of 19,520,986 cwt. Below June and Previous July; Average Daily Output Shows Increase for Period

U.S. wheat flour production in July dipped some from June, pressed by the transition from the old crop year to the new and the general reluctance of users to "take hold" until the new basis was established. Daily average output, however, showed gains over both June and the previous July.

August—with its heavy buying all around and the need to replenish supplies—should tell a different story.

Total July production, as estimated by THE Northwestern MILLER, amounted to 19,520,986 cwt. for the 20 operating days, a decline of 663,014 cwt. (3.3%) from the official June figure of 20,184,000 cwt. reported by the Bureau of the Census. (June had 22 working days.)

July offtake dropped 427,014 cwt. (2.1%) from the census bureau's total of 19,948,000 cwt. for the comparable month of last year. However, the working period for last July covered 23 days compared with only 20 for July of the current year.

Daily Output

Daily average output for last month displayed a better appearance than either June or the previous July, amounting to 976,049 cwt. This was a rise of 59,049 cwt. (6.4%) from the June figure of 917,000 cwt. and 109,049 cwt. (12.5%) over the figure for July, 1959, of 867,000 cwt. daily.

Considering 1960 to date as a whole, total July production was above April and May which had totals of 19,350,000 cwt. and 19,042,000 cwt., respectively, but below January, February, March and June. To date, March was the peak month for output with a figure of 22,137,000 cwt., followed by January with 21,884,000 cwt. and February with 20,396,000 cwt., and then June.

For daily offtake, July's figure of 976,049 cwt. ranks just below January, when the peak grind so far this year was 1,094,000. Mills ground 971,000 cwt. in February, 962,000 cwt. in March and 921,000 cwt. in April. May is the low month to date, with a daily output of 907,000 cwt. «

● ● ●

20,184,000 cwt. Flour Produced During June

Wheat flour production in June was 20,184,000 cwt., averaging 917,000 cwt. a working day, it has been reported by the Bureau of the Census, U.S. Department of Commerce.

This compared with an average output a working day of 907,000 cwt. in May and 918,000 cwt. in June of 1959. Wheat flour mills operated in June at 82.1% of capacity compared with 80.9% in May and 82.7% in June of last year.

Flour mills ground 46,127,000 bu. wheat in June compared with 43,473,000 bu. in May. Wheat offal output was 383,939 tons.

June rye flour production was 173,000 cwt. Rye grindings were 381,000 bu., and 1,917 tons of offal were produced.

These figures represent the production of all commercial mills in the U.S. About 97% of the totals were reported by 282 mills having a daily capacity of 401 cwt. or more and the balance estimated. The estimated portion is based on a survey of the smaller mills in 1950. «

U.S. WHEAT FLOUR PRODUCTION JULY, 1960

Mills reporting to THE Northwestern MILLER account for approximately 74.9% of the total U.S. flour output. Figures for Buffalo, Kansas City and Minneapolis represent 100% of production of those points in hundredweights.

Minneapolis	764,003
Interior Northwest	1,922,379
NORTHWEST	2,686,382
Kansas City	1,042,025
Interior Southwest	4,489,386
SOUTHWEST	5,531,411
BUFFALO	2,241,106
CENTRAL & SO. EAST	2,478,185
NO. PACIFIC COAST	1,684,135
TOTAL	14,621,219
Adjusted	74.9
U.S. TOTAL	19,520,986
DAILY AVERAGE	976,049

QUALITY UNIFORMLY MAINTAINED SINCE 1887

Lake of the Woods Milling Co. Limited

Cable Address "HASTINGS" Montreal

ALL CABLE CODES USED

Makers of CANADIAN HARD SPRING WHEAT *Flour*

Mills at

Montreal, Keewatin, Winnipeg, Medicine Hat

HEAD OFFICE: MONTREAL WESTERN OFFICE: WINNIPEG

More About People

W. H. Crotinger

A Kansan with an extensive background in farming and the economics of international trade has been appointed to a top position with the Great Plains Wheat Market Development Assn., Inc., Garden City, Kansas. He is William H. Crotinger, graduate of the University of Denver, and a Greeley County (Kansas) wheat grower. Mr. Crotinger becomes assistant to the association's president, Clifford R. Hope. By way of background, he majored in economics and international trade at Denver University, with a minor in mathematics and chemistry. Mr. Crotinger served as a director of the National Association of Wheat Growers five years, was a director of the Kansas Association of Wheat Growers 10 years and secretary five years. He represented the U.S. Department of Agriculture at two international trade fairs in 1958, in Turkey and Italy. He was named trade fairs representative of the Great Plains group in March of 1959 and helped develop plans for exhibits of wheat and wheat products at other trade fairs in various parts of the world. He will headquarter at Garden City, assisting in administration of the association's world-wide program of market development.

W. H. Crotinger

Hursel E. Handley

Friends and associates of Hursel E. Handley, the Kellogg Co.'s head miller in its grain elevator at Battle Creek, Mich., have demonstrated that the company veteran may be retired—but not forgotten. An employee of Kellogg more than 40 years, Mr. Handley recently decided to turn over the reins of operation to others. In turn, approximately 40 of his friends and relatives sponsored a dinner in his honor. Then, on his final day of work, associates presented him with a billfold and a substantial cash gift. To climax his years of work, the company gave Mr. Handley a special "memory book" signed by officials and friends. The initial date on which he came to Kellogg's is easy to recall, it was St. Valentine's Day, 1920. He started in the grain elevator as a miller, and for the past seven years has been head miller. Mr. and Mrs. Handley observed their 40th wedding anniversary earlier this summer. Now, with more leisure, they plan to travel across the southern and western states.

Dr. Jerome E. Bakke

A new member of the research team at the central research laboratories of General Mills, Inc., Minneapolis, is Dr. Jerome E. Bakke. A graduate of North Dakota Agricultural College and the University of North Dakota, he is a biochemist.

Fort Garry Milling

Company Limited

MILL AT SASKATOON, SASK., CANADA

SALES OFFICE
BOX 5505
MONTREAL, CANADA

Cable Address: "FORTGARRY"

Codes: Bentley's—Riverside

Canadian Wheat, Oats and Barley

Over 600 Elevators in Manitoba Saskatchewan and Alberta.

UNITED GRAIN GROWERS, LTD.
Winnipeg, Manitoba

Maple Leaf Milling Co. Limited.

TORONTO, CANADA

CABLE ADDRESS
"MAPLEFLOUR"

"A Seat on the Aisle"

All Seaway traffic passes Canada's largest flour mill, the Maple Leaf mill at Port Colborne, situated at the Western entrance to the Welland Canal.

MILLS & FEED PLANTS LOCATED—

Montreal • Toronto • Goderich • Port Colborne
Winnipeg • Medicine Hat • Calgary • New Westminster

test protein on the spot . . .

with this new 5 minute test

High protein means extra money in your pocket . . . but first you've got to find and measure it!

Now you can make your own reliable protein tests in five minutes or less . . . no more days of waiting for laboratory analysis. This means that you can bin your grain or flour by protein percentage *as soon as it's received* . . . blend your incoming shipments for the top resale profit.

This amazing new development, the UDY PROTEIN ANALYZER, introduces a newly discovered principle that now makes possible fast, economical, accurate "on the spot" analysis. You operate it simply without special skills or training.

Whole grain wheat is analyzed by weighing a specific sample and adding a measured amount of a special dye solution which reacts quantitatively with the protein. The sample is then wet milled in the unique React-R-Mill for three minutes. Reaction of the dye with protein is then complete and the remaining unbound dye is merely measured in the color analyzer. This reading is converted directly into protein percentage. Flour is analyzed in the same manner except that milling is unnecessary.

Phone, wire, or write now for further information on increasing your profits with the new UDY PROTEIN ANALYZER. Since production of these units is still limited, your early response may be particularly important.

for full details contact . . .

HEGMAN, INC.
506 Grain Exchange Building
Minneapolis 15, Minn.
Exclusive National Distributor

UDY ANALYZER COMPANY

2205 ORCHARD DRIVE • PULLMAN, WASHINGTON

No. 2

BREAD HONOR ROLL . . .

THE MILLER, in association with Maurice D. Dreicer, the internationally famous gourmet, presents this award for supreme excellence in the production and serving of a flour product to

Ted Lewis's, Washington, D.C.

The award is given for the restaurant's popovers which are served directly from the oven, hot and fluffy. Ted Lewis—who could change places with his entertainer-namesake, swapping his chef's cap for a top hat—believes in single popover service, with a constant supply coming from the kitchen rather than the usual way of serving five or six at a time. And the butter should be on the table, ready and waiting, before the popover is served. Variety in usage is a maxim at Ted Lewis' — popovers have been used when the restaurant ran out of Yorkshire pudding, bringing oohs and aahs of appreciation from the diners. And filled with stewed strawberries, popovers make delightful desserts. Thus is the value of a flour product enhanced three-fold.

Obituaries

FRANK GATES WALLACE, 73, formerly associated many years with the Waggoner-Gates Milling Co., Independence, Mo. Mr. Wallace was a brother of Mrs. Harry S. Truman and a grandson of George P. Gates, one of the founders of the milling firm. Mr. Wallace was secretary of Waggoner-Gates many years and at the time of his retirement three years ago served as chairman of the board.

WILLIAM D. STEWART, 50, of a heart attack. He was a long-time member of the grain business in the Southwest. The past few years he was employed by the Bunge Corp. in Kansas City, previously was with the Commodity Credit Corp., also in Kansas City.

Mr. Stewart lived in Denver seven years, where he was in the grain department of Colorado Milling & Elevator Co.

CLASSIFIED DEPARTMENT

Advertisements in this department are 15¢ per word; minimum charge, $2.25. (Count six words for signature.) Add 20¢ per insertion for forwarding of replies if keyed to office of publication. Situations Wanted advertisements will be accepted for 10¢ per word, $1.50 minimum. Add 20¢ per insertion for keyed replies. Display Want Ads $7 per inch per insertion. All Want Ads cash with order.

◆ ◆ ◆

HELP WANTED

Elevator Superintendent Assistant

The Pillsbury Company has an opening in its major elevator operation in Buffalo, New York. Assist superintendent in developing and applying operational plans, safety and quality programs. Heavy supervisory responsibility along with maintenance supervision.

Applicants should have a high school education plus three to five years experience in supervision in grain handling. Contact in confidence:

Calbert Butler
THE PILLSBURY COMPANY
Minneapolis 2, Minnesota

MILL MANAGER

We are looking for a capable, career mill manager for our Omaha mill. He should be an experienced manager who can take responsibility for efficient operation of the mill, warehouse, elevator and accounting functions. Background in flour is preferable, but we will consider man with associated milling experience or one who has been a branch manager. Our well-established, expanding company offers bonus and pension plans and other fringe benefits.
In confidential reply, send complete details of experience, personal and educational background to:

KEITH JEWELL
NEBRASKA CONSOLIDATED MILLS COMPANY
1521 North 16th Street **Omaha 10, Nebr.**

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FLOUR BROKERS
BALTIMORE 1-3362
21 W. 10TH ST. KANSAS CITY, MO.

HEADQUARTERS FOR
SNOWBELL RICE FLOUR
ONE BAG OR A CARLOAD
GILBERT JACKSON CO., INC.
Board of Trade Bldg. • Kansas City, Mo.

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GRIST of GRINS

Two partners were fishing in a small boat when a storm came up. The boat capsized before they could make the shore and the two men found themselves in the water. One started to swim to shore a couple of hundred yards away, but his business partner had all he could do to keep his head above water.

"Say John," the swimmer called to his partner. "Can you float alone?"

"You crazy?" the partner yelled. "Here I'm drowning and you talk business."

●

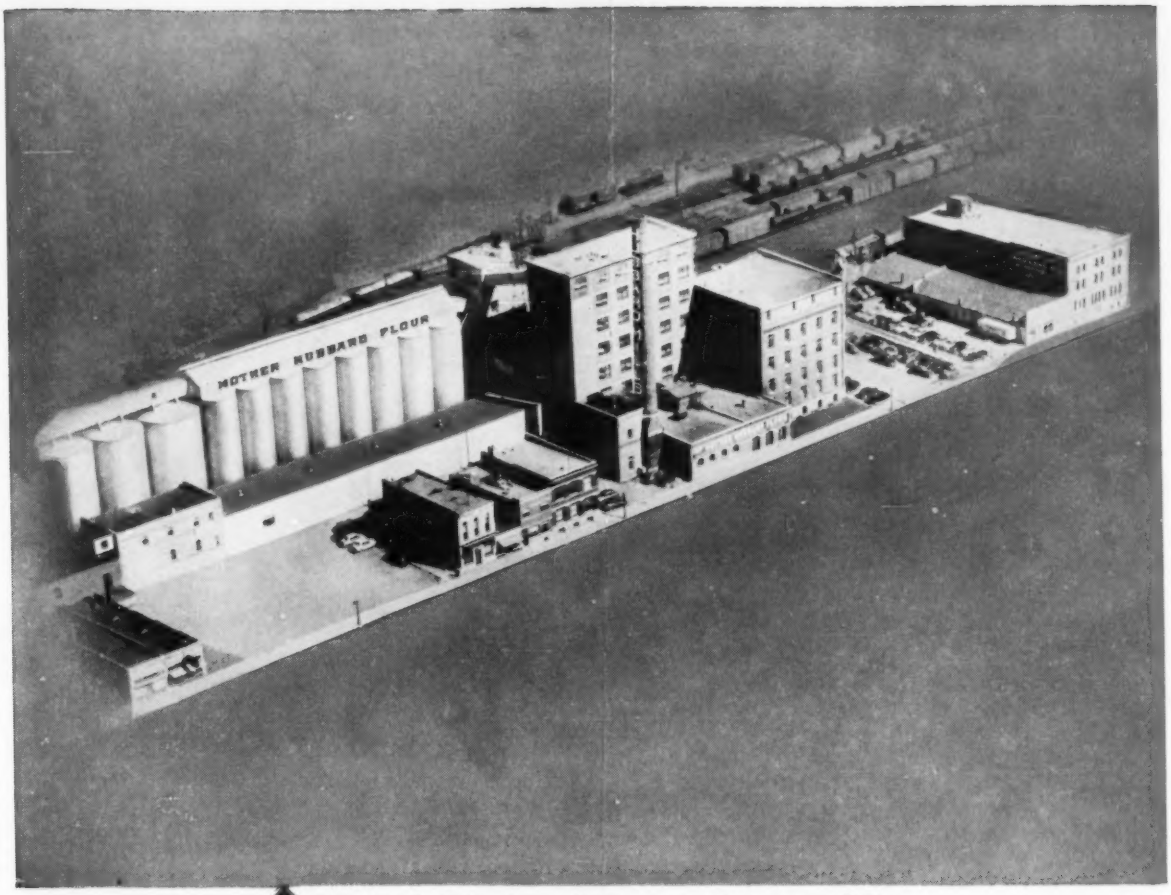
After failing for the second time to pass the road test required for an operator's license, the tearful young woman admitted that the very thought of driving in traffic bothered her.

"Well," questioned the sympathetic officer, "why not wait a year or two and try again?"

"But I can't," sobbed the disappointed lady. "You see, I just have to get back and forth to the air field. I'm a pilot."

●

Best way to remember your wife's birthday?
Forget it just once!



Hubbard Milling Co., Mankato, Minnesota 3000 sacks capacity—mill elevator storage, 500,000 bu.

Mill employee setting single control of Dyox machine for maturing flour.

HUBBARD MILLING CO. KEEPS CUPBOARDS FILLED WITH THE HELP OF

W&T Flour Treatment

Hubbard Milling Co. uses dependable Wallace and Tiernan processes and equipments to send a steady flow of fine flour products to its customers. This mill knows the benefits of doing business with a firm of single-line responsibility — with manufacture, sales, and service under one roof.

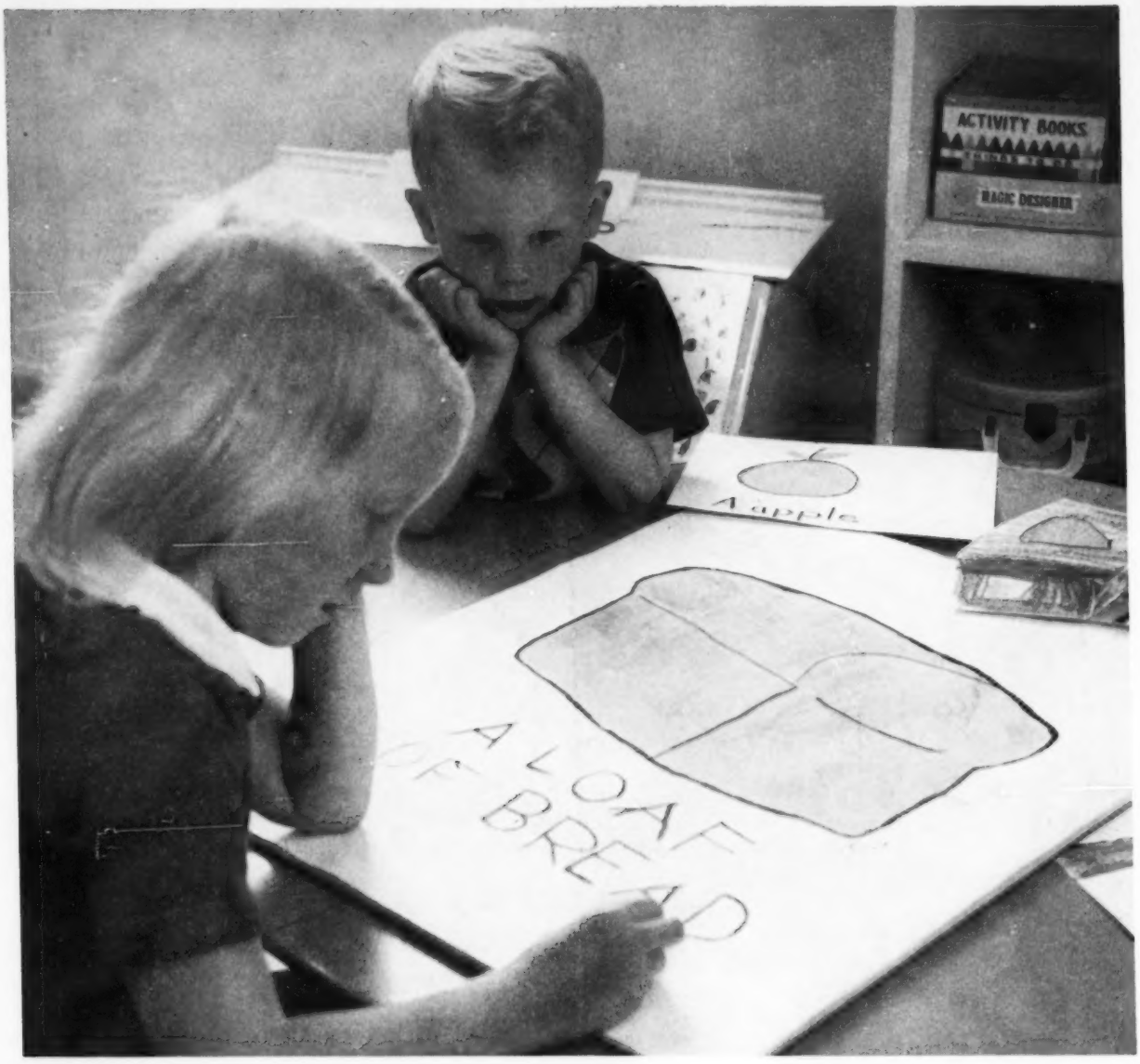
At Hubbard Milling the W&T Dyox® Process is used to generate and apply chlorine dioxide gas accurately and uniformly... matures the flour for best performance in bread baking.

Novadelox®, chosen for its bleaching efficiency, is fed through mill-proved NA Feeders for peak color removal and best color dress. Similar feeders apply "N-RICHMENT-A"® for the addition of vitamins and minerals.

Hubbard Milling Co. is only one of the many milling companies using W&T Flour treatment. If your mill is not one of these, investigate the advantages of Wallace & Tiernan's complete flour service.

N-115.64

NOVADEL FLOUR SERVICE DIVISION
WALLACE & TIERNAN INCORPORATED
25 MAIN STREET, BELLEVILLE 9, NEW JERSEY
REPRESENTATIVES IN PRINCIPAL CITIES



A is still for apple, and B is still for bread

Since the alphabet began, we've learned it through the words that mean the most.

Simple words, with great meaning . . . like Bread. B stands for Bread, and Bread stands for food, for home, for security. Bread has stood for these things since man first stopped roaming to cultivate his fields and raise his grain and start a civilization.

The world has changed a lot, but the basic alphabet by which we live has changed very little; the basics are still the same . . . and B still stands for Bread.

General Mills proudly takes its part in supplying the baking industry with the finest flour the world has yet milled.

Good eating will always begin with Bread

General Mills